UNIV OF MICH.

ANNUAL REPORT

OF THE

BUREAU OF HEALTH

FOR THE

PHILIPPINE ISLANDS

VICTOR G. HEISER,
DIRECTOR OF HEALTH

JULY 1, 1907, TO JUNE 30, 1908

MANILA
BUREAU OF PRINTING
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BUREAU OF HEALTH,
Manila, July 20, 1908.

SIR: Pursuant to instructions from the honorable the Secretary of the Interior for the Philippine Islands, I have the honor to submit herewith a report upon the operations of the Bureau of Health from July 1, 1907, to June 30, 1908, the same being an official statement in general terms of the health and medical work carried on by the Bureau for the period named, and the ninth annual report of this division of the Government of the Philippine Islands.

PRELIMINARY CONSIDERATIONS.

The ground gained in former years in the advancement of public health work has been held, and in certain directions, more strongly fortified. Yet from the standpoint of permanent and definite advancement in public sanitation, this year has not been so satisfactory as the preceding year. Many projected plans had to be abandoned for lack of time.

The resources of the Bureau, all of which ought to have been available for substantial, concrete sanitary work, have been largely diverted along temporary lines in combating and preventing cholera, smallpox, diphtheria, and measles. Success in this feature of the work, however gratifying the immediate effects may be, is not of a permanent character, and can not be classed as real sanitary progress.

In view of the fact that within the last few years there has been such a widespread interest awakened in tropical sanitation, it would be appropriate and interesting on this occasion to review at some length the situation in the Philippine Islands; but owing to the pressure of a multitude of administrative duties, only a brief outline of the work can be submitted.

ACKNOWLEDGMENT.

The report for last year was read and commented on so generally by the medical and lay press that, as a matter of expressing his appreciation, the Director of Health would be gratified to have the opportunity to discuss more fully the character of the sanitary work and health conditions of the Philippine Islands, and to correct many erroneous impressions that have heretofore prevailed. So many letters have been received that it is practically impossible to answer them all individually;

therefore, advantage is taken of the opportunity to incorporate into this report a few items of information which have been requested, and, at the same time, to make a general acknowledgment to the sanitarians, the physicians, and the press for their helpful and friendly attitude toward the progress of sanitary science in the Philippine Islands.

BRIEF RÉSUMÉ OF SANITARY WORK SINCE AMERICAN OCCUPATION.

Ten years ago the Philippines figured but to a slight extent on the sanitary map of the world, hence it is not surprising that little should be known of them in this respect.

When the Spanish war was over, and the Americans, who had come across the ocean in obedience to destiny's call, had oriented themselves with regard to their surroundings, they found that they were occupying an archipelago composed of some three thousand islands, extending from 21° 25′ to 4° 45′ north latitude, and from 116° to 127° east longitude, with a combined area greater than the aggregate area of the States of Pennsylvania, New York, New Jersey, and Maryland, and possessing a coast line equal to that of the United States. In this vast tropical region there are two prevailing winds during the year, one known as the northeast monsoon, which blows almost continuously from November to April, and the other known as the southwest monsoon, which blows from April to November, during which period destructive cyclones sometimes occur. These winds and other meteorological conditions produce a climate varying greatly in different portions of the Islands. The rainy season on some parts of the eastern coast occurs during one monsoon period, while along the western coast it occurs during the other. In general, it may be said that the dry season, in which there is an average rainfall in Manila of 375.5 millimeters, corresponds to the northeast monsoon, and the rainy season, during which there is an average rainfall of 1,137.1 millimeters, corresponds to the southwest monsoon. The temperature varies from an average of about 80° F. in the lowlands, to about 75° F. in the mountains of Benguet, where the summer capital of the Philippine Islands is located. The lowest temperature of the Islands is about 65° F. and the highest rarely goes above 95° F. In the mountain region it ranges from 35° to 80° F. Low temperature, that great aid to sanitation in the temperate zone, is not a factor of influence, the conditions with reference to warmth and moisture being such that mosquitoes and other insects, together with bacteria and parasites, thrive throughout the entire year.

With the exception of the Cagayan and Dagupan Valleys in the Island of Luzon, and the Cotabato Valley in the Island of Mindanao, the interior regions of the Islands are very sparsely inhabited, most of the towns being found along the coast line. The Cagayan River in Luzon is navigable for a distance of 200 miles. The soil in these valleys is very fertile, the Cagayan Valley being often compared by travelers to the valley of the Nile, as the river overflows its banks and fertilizes the country. This is mainly interesting from a sanitary standpoint because of the fact that on the subsidence of the water from the inundated districts, stagnant pools, in which mosquitoes breed in abundance, are left.

It is estimated that at the time of American occupation, the population of the Islands was about six and one-half millions, and that the death rate was so high that the population had been practically at a standstill for many years. There are no records in existence in the Philippine Islands from which even a rough estimate could be formed as to what the actual death rate was, but judging from the mortality at present, with the positive knowledge that a large reduction has been brought about, it would appear that it certainly must have been over 50 per thousand. At the time of American occupation, at least 40,000 persons per annum died of smallpox.

So far as could be ascertained by a careful sanitary survey, not one artesian well existed. The examination of water from practically every section of the Philippine Islands shows that all wells, rivers, springs and other surface sources contain amœbæ, except at such health resorts as Sibul Springs and others of this class, where repeated examinations have proved that the water is free from these organisms.

There was no sewer system in Manila, a city of over 200,000 inhabitants, and the night soil and household waste matter were disposed of in a most crude manner.

The water supply for the city was derived from a river the watershed of which was inhabited by about 10,000 people, who considered it their inalienable right to bathe both themselves and their animals in the river and otherwise pollute the same.

In the city some 31 miles of esteros, or canals, existed which were nothing more than open, filthy water courses into which nearly all waste material found its way.

There was practically no provision for the care of the insane, a common custom being to tie them to a stake with a dog chain.

With the exception of about 200 lepers that were taken care of at the San Lazaro Hospital, Manila, and the Palestine Leper Colony, Cebu, for charity's sake only, some 4,000 or more roamed about the Islands at will.

The question of the disposal of the dead had also been neglected. A single grave was often utilized as many as four or five times, the excavated remains being thrown carelessly about or heaped into an "osario" or bone pile in order to make room for the more recent corpse.

The number of cases and deaths from beriberi in penal institutions was very large. Malaria claimed its victims by the thousands. On account of there being no adequate quarantine system, diseases like plague, cholera, leprosy, and smallpox were frequently introduced from the great infected centers of the Orient. Amœbic dysentery claimed its victims by the hundreds without any hope of relief. Devastating cattle diseases were literally sapping the wealth of the country. Formidable epidemic diseases were prevalent; cholera sometimes claimed as many as a thousand victims per day in the city of Manila, and at times, according to reports, depopulated entire villages in the provinces. Bubonic plague must have been present, as it was found in Manila a short time after American occupation.

Pleasing as it might be to be able to state that all of the foregoing conditions have now been entirely eliminated, yet in all candor it must be said that the work is so enormous, the funds so inadequate, and trained helpers so few that much yet remains to be done. Still, when it is remembered that the Philippine Islands are eleven times larger than all the remaining tropical possessions of the United States, and that it requires over six months to have even small requisitions for supplies from the United States filled, and that the financial resources of the country are meager, it will not be considered remarkable that the conditions have not yet become perfect.

Soon after occupation, a general campaign of cleaning and scrubbing so characteristic of the American sanitarian, was inaugurated throughout the Islands. Sanitary rules and regulations were crystallized into compact shape and enacted into laws. Some three hundred boards of health were organized, so that the needs of the various municipalities could be systematically studied and results secured. Garbage collection, sewage disposal, street sweeping, the isolation of dangerous communicable diseases, the systematic vaccination of the people against smallpox, and many other sanitary measures received attention, and improvement soon became everywhere apparent.

The vaccination of over 6,000,000 people in a more highly educated country with the best of transportation facilities would be no small matter, but it would indeed be an insignificant task compared with such a project in the Philippine Islands where reverse conditions obtain. The undertaking here was begun by permitting each municipality to vaccinate upon its own account, but after several years' faithful trial, this scheme was abandoned, and a plan of systematic vaccination by groups of about twenty-five vaccinators directly under the charge of a competent physician was started in various parts of the Islands. The method found to work best was to commence on the border of a province and systematically work across it until every person was vaccinated. In the provinces near Manila, which represent a population of about a million, there had been 6,000 or more deaths from smallpox annually. Last calendar year after such vaccination was completed, not one death occurred from smallpox.

To-day dozens and dozens of artesian wells exist and in many localities the death rate has dropped as much as 20 per thousand through the general use of artesian water.

The new gravity system which brings water from an uninhabited watershed will be completed within a few weeks. This will practically insure Manila against a serious cholera epidemic by relieving those conditions which have heretofore necessitated a patrol of the shed by United States troops to prevent pollution of the water supply.

A modern ice plant produces daily 100,000 pounds of ice and 5,000 gallons of distilled water, which is sold to the public by the Government at a nominal price.

The new sewer system for Manila, which is being constructed at a cost of about ₱4,000,000, will be ready for use next year. In the meantime, however, the sewage is being disposed of by a system of septic tanks which have proved satisfactory, and have deservedly earned for Manila the name of a city without odors. There is no longer any pollution of the canals or the Pasig River. The 31 miles of esteros or canals have been dredged and cleaned of the filth which has accumulated for several centuries. The moat which surrounded the Walled City has been filled up, and is now being parked. Thousands upon thousands of malodorous wooden structures erected over tight vaults have been replaced by the modern enameled closets, and hundreds of acres of lowlands have been raised above tide level and drained.

Hygiene is taught in the 3,500 public schools of the Islands, and the simple rules of health are repeated like a catechism in thousands of Filipino homes.

The hospital of 160 beds established for the treatment of civil employees is soon to be succeeded by a general hospital, now in process of erection, for which the sum of ₱780,000 was appropriated for the buildings alone, the site having been purchased some years ago. This institution will not only be large enough to meet the needs of the government employees, but will be used as a general hospital as well.

A modern hospital building for the insane is already completed, and facilities are available for the care of 500 of these unfortunates.

In establishing the leper colony upon the Island of Culion, one of the most extensive segregations recorded in history is being undertaken. Of the 4,000 lepers estimated to be in the Philippines, only about 1,000 remain to be collected. It may be remarked in this connection that the policy of the segregation of lepers bids fair to be fully vindicated. Experience during past years was that in those provinces from which the lepers were removed, more than three hundred new cases of the disease appeared annually; at the present time, not more than fifty new cases occur. This result has fully justified the policy of segregation which was commenced two years ago, and it can be confidently asserted that the increase in the total number of lepers has been permanently arrested, and that from now on a steady decline will take place. The fact of the control of this most loathesome disease is irrefutable evidence of the benevolent character of the work being done in these Islands under the auspices of the United States Government, and although it is only a very small part of the work of the Bureau of Health, yet it is worth many times over the entire cost of the maintenance of the whole bureau.

The burial of the dead is now properly regulated in considerably over half of the provinces, and partially regulated in the others.

The free distribution of quinine has greatly reduced the incidence of malaria. Some drainage and other methods of mosquito extermination have been undertaken, but the lack of funds and trained assistance has prevented much headway in this direction.

Great advances have been made in prison sanitation. Diseases like beriberi have been almost eliminated, and the death rate brought down to normal.

The value of the work done here in the past is perhaps best shown by the fact that while many cities in Japan and other Oriental countries were having over 500 cases of smallpox per week, the city of Manila had only a few cases, and that while Hongkong and other near-by ports are struggling with their annual outbreaks of plague, the Philippine Islands are entirely free from this disease.

The methods of combating that great devastating disease cholera have been so improved that, even with the funds and help available in the Philippine Islands, the number of cases and deaths in comparison with former epidemics is greatly reduced. This fact has done much to allay public apprehension; consequently, panics of fear have practically disappeared, and a community in which cholera makes its appearance moves along in the even tenor of its way as if nothing unusual had happened.

Sanitary measures in the Philippines are as productive of satisfactory results as they have been in other countries and communities in which they have been faithfully applied; the death rate has, no doubt, been reduced by ten or more per thousand, which, in itself, means the saving of many thousands of lives. The morbidity has also been lessened, but even after all this has been brought about, the feeling still remains that more should be accomplished.

However desirable the necessary cleaning up and ordinary sanitary measures may be to a community, still experience in the Philippine Islands teaches that such work alone is not nearly so effective in improving the public health as has heretofore been believed to have been the case. Experience in eradicating yellow fever from Cuba by the elimination of the mosquito, and not by the removal of filth, the destruction of the rat for the eradication of plague, the killing of *Anopheles* for the suppression of malaria, all go to demonstrate that there are other sanitary measures possessing equal, if not greater, influence on the improvement of public health conditions than the mere cleaning up of filthy places.

VISIT OF THE SECRETARY OF WAR.

The Hon. William H. Taft, at that time Secretary of War, visited the Philippine Islands during the months of October and November, 1907, and although the official and social demands upon his time were most exacting, he was ever ready by word or action to show his profound interest in every agency or effort, great or humble, for the uplifting of the Filipino people, to whom he is indeed a father and friend. The cause of medical education, public sanitation and hygiene received marked attention and recognition from him.

He visited the Philippine Medical School, the Nurses' Training Department of the Philippine Normal School, the headquarters of the Society for the Protection of Infants, the reservoir and dam of the new water supply for the city of Manila, the Baguio Sanitarium Hospital, and many other places affording a basis for judgment as to the extent of progress during his absence. He inquired into every feature of the work, and expressed his approval of all that had been done. So greatly pleased was he with Baguio that upon his return to Washington, he recommended to the Congress that the present Army post at that point be made a brigade post, and that the tour of Philippine service be increased by the addition of another year, so that by rotation, each organization could be given at least six months' duty at Baguio, thus affording the troops the benefit of a temperate climate.

MANILA AS A MEDICAL CENTER.

In view of the excellent facilities which the proposed new hospital, together with Bilibid, San Lazaro, and the other hospitals already existing in the city of Manila, will offer for the study of tropical diseases, and in view of the large staff of the Bureau of Science engaged in research work, Manila is destined to become the medical center of the Orient.

There has already been organized here an association composed of the leading medical men of the east, for the purpose of studying tropical diseases.

MEDICAL SCHOOLS.

There are two medical schools in the Philippine Islands, the medical department of the Santo Tomás University, established in 1872, and the Philippine Medical School, established in 1907. Both institutions have been signally successful during the past year. Instruction in the medical department of the Santo Tomás University is given in Spanish, while that in the Philippine Medical School, a Government institution, is conducted in English. The faculty of the latter institution, while conforming with the requirements of the Association of American Medical Colleges, has, in the matter of its curriculum and length of course, conformed to the standards of Great Britain. The local hospitals furnish adequate clinical facilities, and the excellent laboratory equipment of the school is supplemented by that of the Bureau of Science.

Vacation courses in practical sanitation were conducted at the sanitary stations of the Bureau of Health.

The medical department of the Santo Tomás University has made some important changes in its faculty and in its course of study with a view of meeting the stricter requirements of the Government, which are to be enforced hereafter, with reference to the relation of the students to the medical examining board. In the Philippine Medical School the professors of the elementary branches give their entire time to the work, thus becoming personally acquainted with every student, and with his needs and capabilities. The policy of eliminating unprepared students has brought the institution up to a very high grade of efficiency. No tuition is charged, and no favors are bestowed. It is the purpose of the Government and of the faculty to maintain in the Philippine Islands a high-grade medical school for the education of the future physicians of the country.

The Government has established a free dispensary and 100-bed hospital in connection with and under the immediate control of this institution.

NEW HOSPITALS.

The requirements of the medical and sanitary work in the Philippine Islands received substantial recognition in last year's appropriation bill, the sum of ₱780,000 being appropriated for the construction of a general hospital in the city of Manila, in addition to the amount previously appropriated for the site; both appropriations making about ₱1,000,000 available for hospital purposes. It is proposed to merge the present Civil Hospital into the new institution, and to provide wards for the indigent and for such pay patients as may apply for treatment. The building will be of reënforced concrete, and will be located upon the Exposition Grounds next to the buildings of the Bureau of Science, so that the best laboratory facilities will be readily accessible. Considerable time was given to the study and comparison of the hospital plans and systems of other tropical countries, as well as those of Europe and America, with reference to the respective merits from a comparative standpoint, and especially with regard to their adaptability and suitability to the conditions in the Philippine Islands. The final decision was that the hospital should consist of an administrative building, and five two-story separate pavilions, which will have a capacity of 30 patients upon each floor, or 60 patients per pavilion. The present arrangements are for 300 beds, but the plans are so drawn as to admit of the erection of additional pavilions as soon as appropriations become available, without involving a change in the original scheme.

The construction of this hospital has been delayed on account of the failure to have the plans completed and bids solicited. The corner stone of the foundation was laid March 2, 1908, by the Secretary of the Interior, the Hon. Dean C. Worcester, in the presence of His Excellency the Governor-General, members of the Commission, the Philippine Assembly, the foreign delegates to the Philippine Islands Medical Association, and many other distinguished persons. Addresses were made by the Governor-General and the Secretary of the Interior; also by Sir Allan Perry, of Ceylon, and Dr. Fernando Calderon, of Manila.

This institution, in addition to being a general hospital for the entire Philippine Islands, will also serve as a training school for nurses and a clinical hospital for the Philippine Medical School.

The new Civil Hospital at Baguio was almost ready for occupancy at the close of the year. The medical work at Baguio has increased so rapidly that the need of additional facilities is felt most acutely. The new hospital will have accommodations for at least 30 ward patients and 14 private-room patients.

The University Hospital on Calle Magdalena in the district of Trozo, Manila, conducted under the auspices of the Protestant Episcopal Church of America, has been completed and equipped, and has accommodations for 25 charity patients and 10 pay, or private-room, patients. This hospital is situated in the center of the poor section of Manila, and is constantly filled to its capacity. Over 2,500 out-patients are treated at the dispensary each month. The Bureau of Health furnishes the greater portion of the medicines used for the indigent poor.

The Methodist Episcopal Church, through its mission service, has opened a fifty-bed hospital for women and children at No. 35 Calle Quesada, Tondo, to be known as the Mary J. Johnston Memorial Hospital. The building was donated by Mr. D. S. B. Johnston, of St. Paul, Minnesota, but the land, furnishings, and equipment were purchased by the Methodist Foreign Mission Society, which also supports the institution. The hospital is under the medical supervision of Dr. Rebecca Parrish, who has charge also of the free dispensary connected with the institution.

The dispensary and hospital were opened temporarily in the Deaconess' Training School building December 10, 1906. From that date to the close of the present fiscal year, there were treated 4,100 dispensary cases; 127 hospital cases, and 441 out-patients who were unable to visit the hospital. In addition, 953 surgical dressings were applied, and 15,305 prescriptions filled.

The new building is located on the Tondo beach, a district of the greatest destitution and squalor in the city of Manila, and will confine its work to the poor people almost exclusively, although a few pay beds have been established for the benefit of those among the better classes who would not seek admission as charity patients. The Bureau of Health supplies a portion of the medicines used in the charitable work of this institution.

A training school for nurses has been established and two American trained nurses employed as instructresses. Four Filipina nurses who have been with the institution since its opening act as assistants.

PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

The fifth annual meeting of the Philippine Islands Medical Association was held in the Philippine Medical School building in the city of Manila, February 26, 27, 28, and 29, 1908, under the direction of Dr. William E. Musgrave, the president. This meeting was the most successful in the history of the Association, and was honored by the presence of a number of foreign delegates, among whom were:

Dr. R. D. Keith, physiologist and assistant pathologist, Straits and Federated Malay States Medical School; delegate from the Straits Settlements.

Dr. Francis Clark, medical officer of health, and delegate from His Britannic Majesty's Colony of Hongkong.

Prof. Taichi Kitajima, M. D., of the Infectious Diseases Institute, delegate from His Imperial Japanese Majesty's Government.

Dr. Cheng Hao, delegate from his Imperial Chinese Majesty's Government.

Sir Allen Perry, the honorable principal civil medical officer of Ceylon, and delegate from Ceylon.

Prof. T. Ishigami, M. D., of the Ishigami Institute for Infectious Diseases. Osaka, Japan.

Dr. Hays, delegate from Siam.

Lieutenant Ryley, R. A. M. C., Hongkong.

Dr. Vassal, of the Institute Pasteur, Nhatrang, Annam, delegate from Indo-China.

Dr. H. Fraser, of the Institute for Medical Research, Kuala Lumpur, delegate from the Federated Malay States.

These gentlemen all delivered addresses on subjects pertaining to medical science.

The opportunity offered for conference with so many medical men engaged in sanitary work in other parts of the Orient was productive of much good. The discussions were mutually beneficial, and will, no doubt, have a direct influence in reducing the quarantine restrictions between the several countries. The study of the great tropical problems connected with dysentery, hookworms, beriberi, and public water supplies, was, in many respects, enhanced. The advantageous results of these meetings were so apparent that it was decided to organize a Far Eastern Medical Association, in order that the field of this work might be still further broadened.

It is greatly to the credit and honor of the medical profession of the Philippine Islands that an association of such broad scope and wide influence should have had its origin in Manila.

SCIENTIFIC RESEARCH AND SANITATION.

While the commonplace demands on the force and time of the employees of the Bureau of Health are quite sufficient to keep every one busy, several scientific investigations have been made in public-health matters.

The diseases of uncinariasis, amœbic dysentery, cholera, and trachoma have been the subject of special attention, and the many treatments for leprosy which are constantly recommended have nearly all been given a faithful trial. So far, the X-ray treatment has given the most hope.

The Bureau at this time is arranging and classifying the statistical data of 1,500 cases of leprosy in all stages of the disease, and, when finished, it will be the most complete clinical record of the malady known to this office. The patients are being thoroughly examined in every part of their bodies for lesions and every fact carefully noted. It is hoped that the completeness of this record may be sufficient to serve as a basis for valuable scientific deductions.

The treatment of amœbic dysentery by a new method in which simaruba and sodium sulphate are the principal remedies, has given far more satisfactory results than any other treatment that has heretofore come to the notice of this Bureau.

Sleeping sickness, yaws, and gangosa are still under investigation, and elephantoid diseases are to be taken up shortly.

Investigation into the prevalence of albinism in the Philippines is now in progress.

Septic vaults, traps, and other fixtures necessary for the disposal of waste, have received careful study, and a number of changes have been made. The use of the old unsatisfactory bell trap has been discontinued, and a new design substituted.

The field of public sanitation is so large and interesting that scientific research work is sure to become more and more the line of prescribed duty for the health officer or public sanitarian. The duty of chasing pigs out of back alleys, cleaning water-closets, and sniffing the air for bad smells may be left under proper advisory supervision to nonprofessional employees; the sanitarian has other and greater duties.

The great problem of the future in the Philippines is to fortify the masses so as to withstand and conquer the germs of disease. These organisms are so numerous that to seek to preserve the public health by a warfare against them alone would be about as logical as to destroy oxygen in order to prevent conflagrations instead of erecting fireproof buildings.

Mention has been made elsewhere in this report of the prevalence of uncinariasis among the people as revealed by the investigation carried out among Bilibid prisoners, and of the special crusade to be made against this disease.

This office is convinced that the proverbial reputation for indolence gained by the natives of tropical countries is due, in a large measure, to the prevalence of the hookworm disease, and that the excessive infant mortality may be in part traced indirectly to the same cause.

Nature has provided all of her creatures with the inate power and means of preservation against their foes, but when all their vital resources are taxed by constant drain on the nutritive supplies, like an impoverished and starving army, they must succumb before their enemies. The system can not withstand even a slight attack that, under more favorable conditions, would be of little consequence, nor can remedies against disease be expected to be effectual under such unfavorable circumstances.

The central idea is that the masses must be prepared to conduct their own defense through their own vital force, and that the most far-reaching and influential cause undermining the health of the Filipino people and making them easy victims to cholera, tuberculosis, and other less formidable diseases, is the general prevalence of intestinal parasites, especially the hookworm, and that it is against this condition that special efforts are to be directed, and from which the greatest measure of success is to be expected.

ARMY MEDICAL BOARD FOR THE STUDY OF TROPICAL DISEASES.

The former Army Medical Board for the Study of Tropical Diseases, composed of Capt. Percy M. Ashburn, Medical Corps, and Lieut. Charles F. Craig, Medical Corps, whose term of service in the Philippines had expired, was replaced by another composed of Capt. James M. Phelan, Medical Corps, and Lieut. Henry J. Nichols, Medical Corps.

Captain Ashburn and Lieutenant Craig conducted many important investigations, and in addition to the work mentioned in last year's report, other results which they obtained were published by the Surgeon-General of the Army and by the medical press. The new board is now actively engaged in their work and has already reported upon the condition of the liver in schistosomiasis, and upon oidiomycosis.

The vast amount of clinical material under the control of the Bureau of Health has been placed at the disposal of the board, and upon several occasions its members have accompanied officers of this Bureau to the provinces while engaged in the collection of lepers, as among many of the cases that are presented as alleged lepers there are found some of the rarer tropical diseases which afford most interesting studies for research work.

In addition to the work done by the board, Capt. Eugene Whitmore is carrying on extensive investigations in opsonic therapy, particularly with chronic forms of gonorrhœa, with which he has had considerable success.

THE IMPORTANCE OF THE COÖPERATION OF THE MEDICAL PROFESSION IN PUBLIC-HEALTH WORK.

Every physician desires to advance the cause of the public health in his community and especially among his own patients. The organized medical profession would regard with disdain any practitioner of medicine who would oppose measures of public hygiene or treat with indifference any effort in the interest of the public health. A large number of diseases may be prevented by sanitary science, and it should be said that the profession as a whole, though it be to the personal disadvantage of its individual members, nobly supports the health officer in his work. With the broadening field of opportunities there arises an urgent demand for closer coöperation. The sins of the average medical man against the interests of public health are those of omission rather than commission. It is easy to forget and sometimes easier to follow the lines of least resistance. Thus a physician will often permit erroneous theories to pass uncontradicted rather than go to the trouble of explaining away the error and replacing it by the truth. This charge is abundantly substantiated by the daily complaints from a misinformed public regarding "sewer gas" and "neighborly" death-dealing odors, which are supposed to cause everything from mumps to bubonic plague and cholera. These false ideas are exceedingly formidable obstacles in the progress of sanitation. It is difficult for the health officer to convince those holding such ideas that there is more safety in personal hygiene than there is in waging eternal warfare against one's neighbor. Had the family physician taken the trouble to explain, these false theories would not have remained to make the health officer's life a burden, and to be actually productive of harm through ignorance of the true cause of disease, thus rendering the holders of such opinions practically helpless in applying the proper measures for the protection of themselves and those whom they seek to save.

Physicians can not overestimate the influence that a silent, acquiescent, attitude has on matters of this kind, while their positive stand for the truth, reënforced by tact and patience, really the only reliable source of correct information to which a large part of the public may find access, is a force that can not be measured.

Bacteriological knowledge has made rapid progress within the last few years, but the popular belief in "bad blood," thick or thin, as may be desired, is through the influence of quack advertisements and the least-resistance attitude of the medical practitioner, almost as firmly intrenched in the minds of these people as if there were no science of bacteriology.

Proper measures of personal hygiene in which the family doctor is and always will be the chief instructor, will go a long way in keeping off many diseases which are not usually classed as preventable. These measures are so simple that it lies within the power of everyone who has been properly instructed to lessen his chances of contracting these borderline maladies, and the physician, by virtue of his relation to the public, has an immense opportunity, not only actively to coöperate with the health officer, but to render an invaluable service to his patients and to the cause of sanitation.

Physicians are in a position to render another important service to the health authorities. The public often misunderstands the purpose of sanitary ordinances and public health measures, and directs its objections, antipathies, and anathemas against the health officer, whom it holds responsible. An explanation, or even a kind word from the family physician, in such cases, works wonders for the cause, and enhances, at the same time, the estimation in which the doctor is held by the community. The people should know that public-health work is not limited to garbage collection, removal of dead animals, cutting weeds and grass on vacant lots, keeping goats out of back alleys, and deodorizing foul smells.

Much greater benefit would accrue to the public if the health officer could devote more time to vaccinating, to spreading the gospel of pure water such as is obtained from artesian wells, to instructing the people how to cure and prevent tuberculosis, how to combat the hookworm, how to avoid amœbic dysentery, how to reduce the infant mortality, how to improve the milk supply, how to detect and prevent adulterated food from being sold, and how to meet situations which have a vital influence on the individual, the race, and the nation.

One of the principal duties of a health organization is the collection, arrangement, and study of statistical data pertaining to the social and hygienic conditions affecting the public.

Every well-regulated city has certain health ordinances requiring prompt reporting of births and deaths, and the suspicion or presence of dangerous communicable diseases. Such ordinances are violated perhaps more frequently than any others, and by the very persons who should be the most interested in their enforcement—the physicians.

Vital statistics can not be more accurate or more valuable than the individual returns from which they are compiled. They, like mechanical structures, can not be stronger than their weakest points. Hence it will be seen that the utmost accuracy is essential.

In the Philippines, one of the principal troubles has been the collection of statistics with regard to births. This may be partly explained by the fact that a large number of children are born without medical attendance, but with proper credit given in this direction, it is still astonishing to contemplate the insignificant value that is attached to a birth certificate by a great many physicians. Birth records, slightly regarded as they are, are among the most valuable documents in the files of vital statistics. They often figure in suits, legacies, and documentary proofs. They are, in various ways, also a source of important statistical deductions which could not be arrived at upon any other basis.

It is a strange thing, too, that doctors will promptly report smallpox, plague, or diphtheria, and never think of typhoid fever and tuberculosis. If physicians could be made to realize the importance which health officers attach to such reports, they would undoubtedly regard the matter in a different light and lapses of memory in that direction would be less frequent.

The value of the health service in a community is largely determined by the attitude of the practising physicians toward such service. Efficiency and value are not always synonymous terms. The health officer's work may be all in vain unless he receives proper support; hence arises the urgent, important necessity for a closer, more professional and a more personal coöperation between the medical practitioners and those who have been entrusted with the duties and responsibilities of officially protecting the public health.

THE PURPOSE OF SANITARY STATISTICS.

The committee of the American Health Association on demography and vital statistics in their sanitary relations, in a report made in 1902, states that deaths are registered primarily for legal purposes; that is, for the protection of certain rights and privileges of individuals and of families. This is the first and most important use of records of deaths, and the sort of utility which appeals most strongly to the public A subsidiary, though highly valuable, use of registration, is the employment of the data in compilation of sanitary statistics, by which the local, State, and Federal health services may direct their measures, improve their methods, and gauge their results.

This office concurs with Woodward, of Washington, who said in an article in the Michigan Journal of Vital Statistics for March, 1908, that the use of registration as a source of vital statistics is paramount to its use for legal purposes, and that if the public health should be the chief concern of the statesman, as has been wisely said, and if vital statistics serve to increase the efficiency of measures tending to preserve and to promote such health, the importance of registration is greater from a statistical standpoint than from the standpoint of the mere legal interests of an isolated individual or the occasional legal interest of the community as a whole.

The committee probably had in mind, when it wrote its report, the actual extent and manner in which vital statistic are now used as indexes to the state of the public health and as guides to sanitary effort, rather than the extent to which they are susceptible of such use and the extent to which they should be so used.

Dr. Woodward believes that the birth rate is of interest chiefly from a sociological standpoint, but that death rates, general and special, and morbidity rates, must be relied upon to show where sanitary efforts are needed, and to demonstrate the results of sanitary work already under way; therefore it is with these reports that the practical side of sanitation is chiefly concerned. Nowhere do the sanitary possibilities in vital statistics, and the difficulties in the way of their realization, become more apparent than in the study of the general death rate. The popularly accepted index to the healthfulness of the community depends, according to the same authority, upon four primary factors; first, an arbitrarily fixed unit of space; second, an arbitrarily fixed unit of time;

third, the number of people, and fourth, the number of deaths. The secondary factors are, however, unfortunately almost innumerable. The number of deaths depends not merely upon the sanitary condition of the locality, or, speaking more broadly, upon its salubrity, but depends also upon the resistance of the individuals of whom the community is composed. When it is sought to analyze the factors that go to make up salubrity, it is found that they include the most varied conditions, as, for instance, the character and extent of changes of temperature, of the prevailing winds and humidity; the character of the soil; the character and location of dwellings; kinds of occupations; quality and availability of the food and water supply; the removal and disposal of wastes, and probably numerous other factors, all going to make up the entity called environment. The variations in the character of the population which determine the resisting qualities are equally numerous—age composition, racial lineage, vital resistance as affected by special causes, distribution by sex, intelligence, financial status, heredity, and other factors of this class.

In order, then, that the highest value may be obtained from the vital statistics that are being more and more extensively compiled every day, great attention must be paid to the scientific analysis of such statistics, not as mere figures only, but as representing scientific facts, so that they may actually afford a proper basis for rational sanitary measures rather than serve merely to flatter the community into a condition of self-complacency when the rates go down, and to frighten it into a state of panic when they go up.

If medical men would learn the value of such statistics when properly arranged and classified, and exercise a little more care in assembling the data, the problem of the statistician would be much easier. There is no place in which correct spelling and correct information are of more importance from a legal standpoint than on birth and death certificates; and it may be added that nowhere are the rules of accuracy treated with more indifference. The birth certificate should be the first official record of a person's name, the death certificate the last. "John Smith" in the former is not sufficiently identified by the name of "J. Smith" in the latter. Let physicians fully realize these truths and the greater part of the statistician's troubles will be over.

SANITARY STATISTICS IN MANILA.

The sanitary statistics of the city of Manila are relatively correct, though considerable trouble has been met with in obtaining birth certificates. Three years ago not over 40 per cent of the births were reported to the Bureau of Health; at present, fully 75 per cent are recorded. The difference is accounted for solely on the ground of persistent effort. Sanitary inspectors make inquiries as to new births at every house they visit, and baptismal data are obtained from the various churches, and every other available source of information is exhausted.

PROVINCIAL SANITARY REPORTS AND STATISTICS.

Complete forms for provincial and municipal sanitary reports have been in use for several years, but owing to the character of the transportation facilities and unfamiliarity of most of the presidents of municipal boards of health with the essential facts of sanitary statistics, the data collected have been incomplete and unsatisfactory; yet the elaborate system of reports has been continued more for their educational value than for any other reason. Such statistics as are received are classified and tabulated in the office of the statistical division of this bureau, but as yet they have not been employed very extensively in the published reports for the reason that their correctness is not properly attested.

A few of the provinces publish special bulletins of their own, in addition to rendering the prescribed forms.

Experience has taught that the only successful way to obtain vital statistics from remote municipalities is the exercise of patient but persistent prodding, and that the average president of a municipal board of health thus stimulated will furnish as complete statistics upon a considerable number of things as he will upon a few.

INCREASE IN POPULATION.

The population of the Islands in times of war and pestilence was stationary, but for the past three or four years, reports from all over the Archipelago show that the number of people is increasing at a satisfactory ratio, notwitstanding the high prevailing death rate among infants. Except in Manila and Tarlac Province, there has been no census since 1903. The Bureau of Health census taken last year showed that between 1903 and the close of 1906 there had been a steady increase in the population of Manila in all nationalities except Chinese and Eurasians, as follows: Americans, 8 per cent; Filipinos, 2 per cent; Spaniards, 14 per cent, and other nationalities, save the two exceptions mentioned, 27 per cent. The next census return will undoubtedly show a large increase in most of the provinces and municipalities.

In some provinces the number of persons recently vaccinated by the Bureau of Health is greater than the number reported by the official census of 1903. In the Province of Tarlac, with a census population of 113,513, the number of vaccinations was 155,679; in the Province of Cebu, with a census population of 653,729, the number of vaccinations was 744,314; and in the Province of Sorsogon, with a census population of 120,454, the number of vaccinations was 128,366. In these three provinces alone, there are at least 120,665 more inhabitants than there were found in 1903.

HEALTH RESORTS.

There are at least three things necessary for health resorts—pure air, pure water, and an agreeable climate. Several places in the Philippine Islands fully meet these conditions, but the only ones which are to any extent utilized by the public are Baguio, Los Baños and Sibul Springs.

The former is especially noted for its climate, and the latter two for their medicinal water.

Baguio is siutated in the mountain region of Benguet Province. Los Baños is on Laguna de Bay, only a few hours run from Manila by steamer. Sibul Springs is in Bulacan Province, and was formerly a Spanish resort. It has been taken over by the Government and the local conditions so improved as to obviate the contamination of the water by surface drainage.

To the popular mind, medicinal springs are endowed with an unvarying and unfailing degree of purity, but they share with other waters the likelihood of becoming polluted, either before or after issuance of the water from the ground.

Sibul Springs, once the Mecca of large numbers of the Philippine population, is again attracting much attention. Formerly, Sibul was rather difficult of access, but now it can be conveniently reached by railway to San Miguel de Mayumo, and then by carromata over an excellent new road 12 kilometers in length, which was constructed by the Government during the year.

The Bureau of Public Works has filled in and improved the course of the stream which flows through Sibul, and which has been largely responsible for the many mosquitoes previously encountered there. The spring itself has been inclosed with a reënforced-concrete wall and the baths have been reconstructed. Former analyses showed the presence of amœbæ, which were, no doubt, carried by the vegetable matter, filth and mud which was washed into the spring by the surface water. Examinations made since the stoppage of the sources of pollution show the water to be free from amœbæ or other animal forms, and chemically to be satisfactory, as shown by the following report:

Chemical analysis made by the Bureau of Science.

	Parts per million.
Reaction	Alkaline.
Total solids	487.6
(*a*) Fixed	458.0
(*b*) Volatile	29.6
Free or saline ammonia	0.0087
Organic or albuminoid ammonia	0.0337
Oxygen consumed	0.5
Chlorine	31.3
Nitrogen as nitrates	None.

Remarks: Satisfactory.

The Sibul Springs' water is undoubtedly a valuable one, being very beneficial in diseases of the intestinal tract, especially those of a chronic catarrhal nature, and will probably take the place of many foreign waters now sold in the local market. The baths, owing to the gases which the water contains, are most refreshing, and apparently of considerable value as an aid to the cure of the diseases for which the water is prescribed.

The report of an analysis made by a chemist prior to American occupation, is, by courtesy of the Libertas, in which it was published in the edition of February 26, 1907, given herewith:

Las sustancias anhidras dosificadas en un litro de agua mineral fueron.

	Gramos.
Acido sulfurico libre	0.018935
Acido carbónico, total	0.485270
Oxido cálcico en el sedimento que se forma por ebullición	0.208337
Oxido magnésico id., id	0.017265
Oxido cálcico en el agua hervida y filtrada	0.005702
Oxido magnésico id., id	0.010494
Acido sulfúrico	0.013734
Cloro	0.041883
Oxido potásico	0.006935
Oxido Sódico	0.024535
Acido silícico	0.037600
El residuo fijo obtenido por la evaporación directa de un litro del agua, y desecado á 18. C. próximamente, pesó	0.532000

Resultado analítico definitivo, deducido por cálculo. Un litro de agua mineral, á 28. C., contiene en desolución:

		Gramos.
Nitrógeno	21.796080 cc	0.027377
Oxígeno	2.303648 cc	0.003293
Acido sulfhídrico	1.224054 cc	0.001894
Acido carbónico libre	51.960889 cc	1.120995
Bicarbonato Cálcico		0.535724
Bicarbonato mágnésico		0.054133
Sulfato Cálcico		0.013848
Sulfato potásico		0.001283
Sulfato sódico		0.008873
Cloruro magnésico		0.024582
Cloruro sódico		0.039055
Acido silícico		0.037600
Total de substancias mineralizadoras anhidras		0.868617

Clasificación—Aguas hipotermales; sulfhidricas, bicarbonatadas, cálcicas, nitrogenadas.

Comprobación del resultado del análisis:

		Gramos.
Total de substancias mineralizadoras según el cuadro anterior		0.868617
Nitrógeno	0.027377	0.335676
Oxígeno	0.003293	
Acido sulfhídrico	0.001894	
Acido carbónico libre	0.120955	
Acido carbónico formando sal ácida con carbonato cálcico	0.163693	
Acido carbónico formando sal ácida con carbonato magnésico	0.018464	
Diferencia correspondiente á la cantidad teórica de substancias fijas por litro		1.532941
Substancias fijas por litro determinadas experimentalmente		0.532000
Diferencia despreciable		0.000941

APLICACIONES TERAPÉUTICAS.

Indicaciones.—En las dermatosis húmedas, úlceras atónicas, herpetismo, catarros gastro-intestinales, dispepsias, disentería crónica, infartos hepaticos y en los desarreglos menstruales.

Contraindicaciones.—Afecciones del corazón y de los grandes vasos, gota.

Usos balnearios.—En baño, en bebida, tomando de dos á cuatro vasos diarios, y en chorro.

Temporada balnearia.—De Noviembre á Mayo.

At the last session of the Philippine Legislature ₱10,000 were appropriated for the purpose of still further improving the site and surroundings, with the view of making this water available and safe for a greater number of people than before.

In view of the improvements, and in view of the laboratory report on the water, the Manila drug stores have taken the matter up, and Sibul Springs water may be obtained at a reasonable price.

The military has established a sanitarium at Los Baños where soldiers and military employees suffering from syphilis and rheumatism are sent for treatment; convalescents are also sent to this resort. Besides the military hospital, a private sanitarium is conducted by a reputable physician.

Baguio is the summer capital and the principal health and climate resort of the Archipelago. The lower temperature has a remarkably exhilirating and refreshing effect upon persons who have been residing in the lowlands. For the great majority of the cases of amœbic dysentery, it is almost a specific. Malarial fever is unknown. The climate is well adapted to convalescents from typhoid and malarial fever, and other wasting diseases.

The military is constantly constructing additional buildings and increasing the capacity of its camp. A large modern hospital building was completed during the year. An appropriation has been requested from Congress for the construction of a brigade post in order that the necessity for returning troops to the United States every two years may be obviated by giving them the benefit of the Benguet climate. Mention has been made of this on page 9.

The Civil Government has also completed a modern hospital building at Baguio during the year. It is believed that confinement and many cases requiring surgical assistance, from which convalescence is necessarily prolonged, will avail themselves of the cooler climate.

The stay of a number of visitors at Baguio for a period of several weeks during the past few years at the beginning of the rainy season, has been made uncomfortable by attacks, the symptoms of which resembled the "hill diarrhœa" of other countries. No permanent bad effects have been noted, and it is believed that the symptoms are due to drinking water which has not been properly boiled and filtered. At the beginning of the rainy season, large quantities of mica or some other mineral irritants are probably washed into the springs or other sources of water supply, and then ingested, which produces diarrhœa. Distilled water will be available next season, and it is believed that all who use this exclusively will not be affected.

NEW WATER SUPPLY OF MANILA.

With the completion of the new water system for the city of Manila, the cost of which is placed at approximately ₱4,000,000, one of the largest sanitary reforms undertaken by the American Government will have been concluded. It is confidently hoped that an improvement in the public health will be immediately noticeable, and that the great scourge of modern civilization, typhoid fever, will now not gain a foothold in the Islands.

The new water system will probably be completed long before this report is published. When the water becomes available, the health authorities will be spared many anxious moments, as the danger from pollution will be practically eliminated. It will not be necessary to send soldiers to protect the river as has been done in the past, for the reason that the intake is located beyond the line of human habitation, and the control of the intervening territory secured.

Too great emphasis, however, can not be laid upon the fact that all the water examined from rivers, streams or shallow wells in the Philippine Islands, has been found to contain amœbæ. It is not known whether they are pathogenic or not, and it is therefore urgently recommended that *all* drinking water be sterilized before use. It is, of course, too much to hope that all the residents will follow this advice at once, but it is believed that Americans, Europeans, and the better class of Filipinos, will continue to use distilled water.

The Military Government has its own distilling plants, while the civil employees purchase water from the Insular Cold Storage and Ice Plant.

SANITARY ANALYSES OF WATER.

Many samples of water have been examined bacteriologically and chemically by the Bureau of Science at the request of this office. This feature of the work has been extended to many provinces, whereas it was formerly largely restricted to Manila. In the case of public houses serving infected water, a reasonable time is allowed to make an improvement in the condition, and, if not done, the houses are closed until they comply with the requirements of the law.

DISTILLED WATER.

The division of cold storage of the Bureau of Supply furnishes all employees of the Civil Government with distilled water at a nominal charge.

The original source of the water is an artesian well seven hundred feet deep. The water is first delivered to an overhead tank, from which it passes over hot plates, where it is raised to a temperature of 180° F.; thence it goes to the boilers where it becomes steam, and is used for the generation of power. The exhaust steam passes from the cylinders to piping which conducts it first to a sand filter, then to a charcoal filter, and finally to the condenser. So much of the outflow of water from the condenser as is not used in the manufacture of ice is again filtered through fine sand before running into the delivery pipes.

An analysis of this distilled water was made by the Bureau of Science on February 20, 1908, with the following result:

	Parts per million.
Total residue by evaporation	2.8
Volatile matter	1.2
Fixed residue	1.6
Nitrites	None.
Chlorine	None.
Oxygen consumed	None.

BOTTLED DISTILLED WATER.

To meet the demand of a large number of patrons desirous of having bottled distilled water delivered at their residence, a private firm and the division of cold storage now deliver water in boxes of six bottles.

The size of the bottles makes it convenient to store them in an ice chest, and water can be served directly from them, thus doing away with all danger of contamination.

Much of the value of distilled water is frequently lost by its coming in contact with unsterilized vessels after leaving the delivery wagon. Experience has shown that it is almost impossible to instill into the mind of the average *muchacho* a proper regard for sanitary precautions in the matter of drinking water. Typhoid, dysentery, and diarrhœa are frequently the penalty of carelessness in this respect.

The water is delivered within the city limits in tank wagons or in cases of six 2-quart glass bottles. Both the tanks and the bottles are carefully sterilized before being filled with water. The demand for distilled water delivered in bottles has far exceeded all anticipation.

An important sanitary reform has been inaugurated in this new departure, which merits the gratitude of the public and the sincere thanks of this bureau.

BIOLOGICAL STUDY OF THE WATER SUPPLY OF THE PHILIPPINE ISLANDS—NEW PATHOGENIC ORGANISM.

The paper of the above title was read at the last annual meeting of the Philippine Islands Medical Association by Dr. Ralph T. Edwards, of the Biological Laboratory of the Bureau of Science. He stated that practically all of the natural sources of water supply in the Philippines contain amœbæ and that the only water which had been found not to contain amœbæ was that taken from artesian wells. Experiments which he conducted with different filters led him to the conclusion that the only safe water to drink was that which had either been distilled or boiled. His examination of the aërated bottled waters sold in the local market showed the same to be fairly satisfactory.

In an examination made of a specimen of water taken from a well in Calle Cabildo, Intramuros, Manila, a pathogenic bacillus was detected which he named the *Bacillus Cabildonus*. This organism was found to be of extreme pathogenicity in small animals.

ARTESIAN WELLS.

As stated elsewhere, the Legislature of the Philippines has indorsed the artesian-well movement by appropriating the sum of ₱150,000 for the extension of the system. The success attained by this measure of public sanitation, in reducing the death rate 50 per cent in many instances in those municipalities in which wells had been sunk, has already taken the project out of the experimental stage and placed it on a firm foundation supported by a growing, favorable public sentiment which will be greatly enhanced by the recent action of the legislature.

The Bureau of Public Works is now busily engaged in sinking the wells for which appropriation has been made.

THE GOTA DE LECHE SOCIETY.

On the 1st of December, 1906, the Gota de Leche Society was formally organized, and incorporated later under the name of La Protección de la Infancia. It is conducted principally by Filipina ladies, aided by a number of American ladies. The organization, as its incorporated name implies, is a society for the protection and care of infants. It is organized along the same lines as similar societies in European cities.

According to carefully prepared estimates, the mortality among maternal nursed infants under two years of age in the city of Manila is less than one-tenth of the mortality in bottle-fed children. What is true of Manila will probably hold good throughout the provinces, but no statistics are available to safeguard the assertion.

Dr. David J. Doherty, of the city of Chicago, was one of the prime movers in the organization of the Manila society.

DAIRIES AND DAIRY PRODUCTS.

The Sanitary Code makes it unlawful to bring into the city of Manila or sell, or offer for sale, any milk that is not fresh and wholesome, or that has been watered, adulterated, reduced, or changed in any respect, by the addition of water or any other substance, or by the removal of cream; except that milk from which any part of the cream has been removed may be offered for sale, or sold, if the fact is publicly advertised on the cart, or in the place of business of the vender, or made known to the purchaser at the time of sale. Adulterated milk is defined as (*a*) milk containing less than 12 per cent of milk solids, including fats; (*b*) milk containing more than 88 per cent of waters or fluids; (*c*) milk containing less than 3 per cent of fats; (*d*) milk drawn from animals within fifteen days before or five days after parturition; (*e*) milk drawn from animals fed on any substance in a state of fermentation or putrefaction or any unwholesome food; (*f*) milk drawn from cows in a diseased or unhealthy condition, or from cows kept in a crowded or unsuitable place; (*g*) milk from which any part of the cream has been removed; (*h*) milk to which has been added water or any foreign substance whatever.

Dairymen or other persons having in their possession milch or dairy animals, the milk of which is to be sold or distributed in the city of Manila, are required to have such animals, prior to the sale of the milk, subjected to the tuberculin test in order to determine the presence of tuberculosis.

Before the Bureau of Health established a system of strict surveillance over the sale of milk, the practice of adulteration by water was quite prevalent. The principal adulterations were, in the case of cow's milk, the addition of water and the abstraction of cream. The former greatly diminished the nutritive value, and as the water was frequently from an unclean source, it was the means of introducing disease organisms; the abstraction of the fats robbed the milk of one of its most valuable constituents.

The addition of coloring matter for the purpose of concealing the evidence of adulteration or the abstraction of cream had not become a general practice, but, no doubt, in the course of time, it would have become popular. Rice starch was sometimes used to thicken a diluted milk, and to the uninitiated it was a measure of the "fuerza" (strength) of the product.

In temperate zones it is generally regarded that a milk not more than twenty-four hours old may be considered a fresh article; but in this climate it would be permissible to allow even half that many hours unless the milk had been kept at a very low artificial temperature from the time it was drawn.

The milk supply in the Philippines is so limited that there is very little demand for pasteurization and sterilization as permanent preservative methods, the only process resorted to being that of reduction of temperature, as the Food and Drugs Act prohibits the use of chemical preservatives.

Milk was formerly a more important factor in the spread of disease than it is now since the dairies and milk venders are so closely watched. There are stringent laws against the use of milk from animals suffering with rinderpest, foot-and-mouth disease, anthrax, surra, actinomycosis, tuberculosis, or other diseases of an infectious nature.

There is no doubt that the milk supply of the Philippine Islands is sometimes responsible for the introduction of the tubercule bacilli into the human system. This statement is made without reference to the merits of the controversy as to the identity of bovine and human tuberculosis. The fact alone that warm milk is such an ideal medium for the transmission of bacteria is sufficient to justify the hypothesis, if there were no reasons to suspect the direct transmission of the disease from the infected animal to the user of the milk.

In the Philippines, and other tropical countries, milk has a better opportunity to become contaminated than in cooler climates, especially as containers and vessels of all kinds are usually washed in cold, unsterilized water. Then, there are the regular channels of infection; that is, from the hands, person, and clothing of the milkers, venders, and others by whom it is handled.

It is prescribed by administrative and ordinance regulations that no person sick with or convalescent from infectious diseases or having to do with the care of the sick or with the disposal of their excreta or with the washing of their clothes, shall be allowed to handle milk intended for the use of others, but it is not always practicable to enforce this regulation except among such employees as drivers and others whose duties bring them within the realm of constant inspection.

The poorer classes in the Philippines use the milk of the carabao almost exclusively, while the upper classes use goat's milk and the milk of the cow. Australian dairies may be found in Manila and in the larger cities, but on account of the prevailing high prices, the poor people can not afford to purchase this class of milk.

Gradually the conditions are improving, but success is dependent on continuous strenous effort and watchfulness. The same methods and measures enumerated in last year's report are still employed. Samples are collected from each district daily and submitted for analysis, and prosecutions are instituted in all cases of flagrant willful violation of the law.

Owing to the scarcity of milch animals, the use of condensed milk by the poor, and imported sterilized milk by the better classes, is quite prevalent. Sterilized milk in hermetically sealed cans is imported from Switzerland and Italy, and has proved to be a very satisfactory substitute for the fresh article.

Butter and cheese are practically all imported from foreign countries.

ADMINISTRATION OF THE FOOD AND DRUGS ACT.

Judging from the character of the foods which were rejected at the time this law went into effect, it appears probable that much of the illness that has heretofore been ascribed to the tropical climate was likely not due so much to the effects of the climate as to the added chemicals which the food products contained which are prepared by foreign manufacturers for the use of residents of tropical countries.

The administration of the Food and Drugs Act has been conducted with gradually increasing adherence to the letter and spirit of the law.

There were examined during the year a total of 696 samples of food and drug products. Of this number, 89 were rejected, and 172 misbranded, which were released upon being properly relabeled. Of the total number of samples examined, 561 were products which had heretofore not come under laboratory observation. Of this number, 77 were rejected, and 160 misbranded. Many of the importations were either denied admittance or were only admitted after being relabeled, because they were of the same brand as shipments which had been denied admission as the results of other analyses.

There have been very few willful evasions of the law, and the merchants of the Philippines have shown a most commendable spirit in their efforts to comply with the requirements.

Some idea of the extent of the sophistication and fraud practiced before the passage of the Food and Drugs Act may be gained by a brief consideration of a few of the commoner evils that prevailed. An article in "Colorado Medicine" by Dr. Edward C. Hill, recently published, so closely coincides with the facts in the Philippines, and fits the case so well, that it is liberally quoted from in making reference to former conditions.

Most reprehensive of the practices were in the nature of sophistication; that is, the addition or substitution of comparatively harmless substances, which were injurious, however, from a negative standpoint, through deprivation of the displaced normal ingredients, and because of the impairment of the natural flavor upon which good appetite and digestion largely depended.

Water was sometimes added to lard up to 24 per cent, with the aid of lime or carbonate of sodium or potassium. "Renovated process" or "hash" butter was prepared by heating and treating with sodium carbonate. Rennet, or a mixture of pepsin and sodium sulphate, or gelatin and glucose, were added to butter (stretched butter) to make it hold more water (up to 50 per cent) and so increase its weight. "Refined" or "compound" lard was a mixture of beef fat and cotton seed oil. Lard was also adulterated with starch, lime, alum and salt. Colored oleomargarin was sold for butter. This product, if pure, is wholesome and nutritious, but is not so readily digested as butter, hence is contraindicated for invalids. "Butterine" had lard and oleo oil added to the milk before churning.

Skimmed milk cheeses were occasionally "filled" with lard, cotton-seed and other oils, but such sophisticated products lacked the natural aroma and flavor. Olive oil was extensively adulterated, especially with cottonseed oil (sometimes with peanut or sesame.) There is no objection to this from the hygienic or dietetic point of view, but it is nevertheless a fraud. Almond oil was often adulterated with the poisonous oils of peach and apricot kernels. Menhaden, whale and seal oils were used to adulterate codliver oil.

Starch was a very common "filling" agent (increasing weight and capacity for water) in potted beef and poultry, patés, sausages (preventing shrinkage when fried), yeast, baking powders (up to 50 per cent—should not have exceeded 20 per cent), ground mustard and canned corn (rendering liquid more creamy). "Lemon jelly" was made from starch and tartaric acid. Potato starch was often mixed with sago. Extract of yeast was sometimes found in meat extracts. Wheat flour was occasionally adulterated with corn meal and other cereals. "Buckwheat" flour used to be a mixture of rye, maize, wheat, etc.

Cane sugar was sometimes added to honey and to Indian corn which was lacking in sweetness. Much more objectionable was the use of saccharin in corn and tomatoes. Jellies and jams were often nothing more than glucose, gelatin and starch paste flavored with essential oils and colored with anilin dyes. Apple stock (pulp, skins, seeds, cores), pumpkins, turnips, and molasses were the common bases for all kinds of jelly sold in stores. Glucose is also a leading component of imitation honey, maple sirup, and fruit butters. Glucose is only half as sweet as cane sugar, but it is not injurious to health, except as it may contain sulphuric and sulphurous acids, used in its manufacture and not completely removed. Cheap confectionery was composed largely of glucose and starch colored with anilin dyes. The use of paraffin in butter scotch and chocolates is dangerous, because of its insolubility.

Foreign mineral contamination, accidental or surreptitious, is usually negligible in quantity. Actual dirt is sometimes left purposely in truffles. One seldom encounters of late ground gypsum, talc, terra alba, silicates, marble, or chalk, in confectionery or flour; iron or brass filings, soapstone, gypsum, or sand in tea; lead salts and iron oxid in cocoa, or sand in sugar. Arsenic (from pyrites used in making sulphuric acid, for manufacturing glucose) is an occasional dangerous, even fatal, contaminant of beer and soda water. Lead compounds have been added to wines to sweeten the product. Tin, lead and zinc, from can solder, may accidentally contaminate canned meats, fish, and fruits—danger enough without adding to it by supplying these poisons. Varnishing the inside of the cans prevents electrolytic solution of the metals. A trace of zinc is sometimes found in dried apples, from the use of galvanized iron racks. Molasses manufactured in the old way should hardly be considered an edible substance, since it contains tin chlorid, zinc salts, and sulphurous acid used in refining the sugar of which it is the residue. Solutions containing copper, lead, mercury or asenic have been applied to the outside of cheeses to preserve them from insects. The "bloom" of lime on nutmegs answers the same purpose.

According to Wiley, the basic sulphate of aluminum is the acid ingredient in the great majority of present-day baking powders. He says that if the proportion to baking soda is properly balanced, the powder leaves on reaction aluminum hydrate (not ordinary alum) and the sulphates of sodium, potassium or ammonium (ammonium carbonate sometimes used as alkaline agent). Alum baking powders have no marked effect on the health, except a tendency to produce constipation, but yeast bread is probably more hygienic than that prepared with these powders. Alum was frequently added to baker's bread to render it hygroscopic and whiter and to prevent souring. It was also found in pickles and ground ginger.

Ground spices were commonly sophisticated with fruit stones, hulls and shells, flour, starches, cereals, ground shipbread, charcoal, sawdust, clay, gypsum, and cheaper spices. Whole ginger was sometimes "whitewashed" with chalk or plaster of Paris, or bleached with chlorinated lime or sulphurous acid. Ginger, previously exhausted by the ginger-beer manufacturer, was often sold as genuine. Whole black mustard was frequently mixed with rape seed. Pepper used to contain a large proportion of sand and other mineral matter. Unground pepper berries were sometimes weighted by saturating with brine, or whitened by bleaching or facing with chalk. Cayenne pepper was, at times, weighted with red lead.

One of the most dangerous and reprehensible forms of adulteration was the use of wood alcohol in cheap flavoring extracts. "Lemon extract" was sometimes made from the oil of grass. "Vanilla extract" was frequently prepared from the tonka bean.

Cocoa and chocolate were adulterated with vegetable oils, mutton tallow, clay, brick dust, and Venetian red. So-called soluble cocoa was prepared with sugars and starches, particularly arrowroot. Ground coffee was commonly sophisticated with the darker, more bitter chicory, which itself might have been adulterated with beets, mangel wurzel, dandelions, oak bark, sawdust, and colored earths. Spent coffee beans were now and then roasted with sugar and sold as genuine. Package substitute coffees consisted of roasted ground peas and cereals.

Many were the deceptive names of food preparations. "Full cream" cheese simply meant cheese made from the whole milk. "Egg powders" for making cakes consisted of colored casein or starches. "Raspberry sauce" was frequently made almost wholly from gelatin. Gluten flour always contained starch, the standard not over 48 per cent.

A frequent form of simple fraud was misnaming a natural product as to its geographic origin; for example, the Maine herring sold as the European sardine. Horse flesh and other meats of uncertain origin were occasionally utilized in sausages.

A very frequent kind of adulteration was the addition of coloring matters and other substances to "improve" the appearance or taste. Such "improvement" is deceptive, and panders to a semibarbaric taste for high colors and flavors. The natural colors in cochineal, burnt sugar, annatto, saffron and chlorophyl are considered harmless, but only a few anilin dyes have escaped condemnation by experts. There have been several deaths in young children from eating the concentrated colors. These dyes may contain arsenic or mercury, used as oxidizers in their manufacture. The coal-tar dyes are cheap and were used very extensively in confectionery, ice cream, jams, jellies, wines, sausages, mince meat, pie fillers and maraschino cherries. Practically all butter was artificially colored, sometimes with marigold, turmeric, saffron, or annatto; often with coal-tar dyes, especially methyl orange and carotin. If it is really desirable for butter to have a rich yellow tinge, this can be accomplished in a natural way by feeding the cows carrots, rutabagas, yellow maize and clover hay. Cheese was colored with carrot juice, saffron, annatto, turmeric, and yellow azo dyes. Naphthol yellow was used in cakes. Curcuma was commonly added as a coloring agent to ground ginger, mustard and rhubarb. Gelatin and caramel were sometimes put into milk or cream to make them look richer. "Viscogen," a sirup of lime (6½ per cent) was used to give body to creams.

Mineral coloring matters are much more objectionable than vegetables. The oxids and salts of arsenic, copper, chromium and lead are especially injurious, and have been found in confectionery, flour, cakes, and cheese. Copper sulphate and nickel salts give an intense green color to cucumber pickles and canned peas which are imported into this country. Stannous chlorid precipitates the coloring matters from syrups and gives a bright yellow appearance. Tea leaves were faced with lead salts or Prussian blue.

Bleaching agents in food are of hygienic importance. Sulphurous acid (the fumes of burning sulphur) is used with dried fruits, starches, wines, and finished sugars (may contain salts of tin or ultramarine blue). Bisulphite of sodium or potassium was formerly used with canned corn. Inferior flour was bleached by electrically generated ozone and oxids of nitrogen. Saponium was added to soda water syrups to give a good foam; this often caused gastritis.

"Soaked" or "floated" oysters looked plump, but readily lost flavor and frequently became infected from the water or ice used.

Imitation maple sirup was made of extract of hickory bark (mapleine) with glucose or cane sirup. Synthetic imitation fruit flavors and sirups were commonly utilized for cakes and ices. Sauces were sometimes rendered piquant with sulphuric acid. Alcoholics and poisonous flavors (oil of mirbane) though injurious, were made use of in candies.

Alcoholic liquors used to be commonly adulterated; beer with quassia, gentian, columbo, chiretta, chamomile, kino, cream of tartar, copperas, orris root, picric acid, strychnin, picrotoxin, wormwood, capsicum, cinnamon, ginger, and other spices. Sodium bicarbonate was used in beer to correct acidity and increase the bead. Glycerin sweetens the beverage and gives it body. Poisonous fusel oil is present in young raw whisky and in imitations.

Cheap wines were made from raisins, dried apples, raspberries, and gooseberries. Champagne has been made from gooseberries and water. Gin was often concocted from a mixture of water, sugar, cinnamon, alum, capsicum, cream of tartar, and a little alcohol. Prune juice was frequently added to factitious and fictitious rum. Alum heightens the color of wines; added acids imitate the reaction of mellow age. Cheap wines were "plastered" with calcium sulphate, which preserves the product and improves the color by forming an acid sulphate of potassium and separating out tartrate of potassium.

The question of the use of chemical preservatives in food has long been a storm center of controversy between sanitarians and manufacturers. Dr. H. W. Wiley, Chief of the Bureau of Chemistry, Department of Agriculture, the foremost authority upon this subject, declares that nearly all food preservatives (including borax, boric acid, sodium sulphite, and benzoic acid) used continually, have a deleterious effect upon digestion and are irritating to the kidneys. He holds that sterilization suffices for canned meat, and that grain spirit and the simple condimental substances (salt, sugar, spices, vinegar, wood smoke) in moderate quantities are the only unobjectionable added preservatives. One important objection to food preservatives is the stale condition which they hide, though not preventing the formation of autolytic enzymic products detrimental to health.

Borax and boric acid have been extensively used in milk, cream, butter, meats, beef juice, broken eggs (2 to 4 pounds of borax per 100) and oysters. Borax and sodium carbonate are sometimes added to tea to improve the color of the infusion. Borax and boric acid (not over 1½ per cent) have been recommended by Vaughan as an application to the surface of hams and bacon, to prevent the slimy decomposition due to anaërobic bacteria. "Preserving salts" contain about 30 per cent borax and 10 per cent common salt. A popular "preservaline" contained of borax about 70 parts and of salt about 30 parts. "Ozone antiseptic" is composed of 2 parts boric acid and 3 parts borax.

Sodium sulphite and saltpetre were added to meats to preserve the red tint of the fresh article. "Meat preservative" contains 65 per cent sodium sulphite, and 34 per cent sodium sulphate, colored with anilin dyes. A recent federal inspection decision permits the presence of 350 milligrams of sulphur dioxide (not over 70 milligrams free) per liter in wines and molasses. Glycerin was used to preserve beef juice and bone marrow. In large amounts it may have a hemolytic action, as shown by the urine. Benzoic acid or sodium benzoate was frequently added to meats, fruit juices, catsups, jams, jellies, and fruit butter. In viands like catsup, necessarily exposed to the air some time after opening, sodium benzoate is generally considered still permissible in the proportion not to exceed one part in 1,000. Salicylic acid, hitherto used in fruit juices, jams, jellies, milk, wines, beer, and catsups, is now rightly prohibited.

A most reprehensible practice was the addition of formaldehyde (" freezine, icelene, preservaline, milk sweet") to milk, wines, broken eggs, and shucked oysters.

Dr. Wiley reported to the Committee on Agriculture of the House of Representatives of the United States Congress, the result of the experiments conducted by the Bureau to determine the poisonous effects on the human system of such drugs as borax, benzoic acid, benzoate of soda, sulphate of copper, sulphur dioxide, formaldehyde, and salicylic acid, when contained in food stuffs. He said that the expulsion of those and kindred drugs from the body is performed almost entirely by the kidneys, and that he is satisfied that the term of American life would be lengthened if the use of such drugs in foods were wholly discontinued. He said he is convinced that kidney disease, so prevalent among Americans, is partly the result of constant introduction into the system of such preservative substances as benzoate of soda, carried in the food. Discussing sulphur dioxide and its injurious effects, Dr. Wiley told the committee of a discovery just made by him that salt solution is a perfect substitute for sulphur in the whitening and drying of fruits. In the samples exhibited, dried experimentally by the Bureau, the sulphured fruits were not so white nor so tender as the salt cured.

The consumer, as well as the manufacturer, is entitled to a "square deal." Deleterious substances should not be permitted under any consideration, and also adulterations and sophistications not manifestly injurious should be plainly labeled, so that the public may know what they are getting. No other law enacted by Congress has had such a universally beneficial effect upon the people at large. The Philippine law is nearly an exact repetition of the law of the United States, and has almost revolutionized the food situation in these Islands.

AERATED WATERS.

It is most satisfactory to report that samples of aërated waters which were collected from practically every factory of this kind in Manila showed that the use of sterilized water for this purpose has now become general, and for that reason it was unnecessary to recommend any prosecutions on this account.

THE PATENT AND PROPRIETARY MEDICINE EVIL.

The administration of the Food and Drugs Act has included close supervision of the importation, manufacture and sale of patent and proprietary medicines. Some flagrant frauds have been exposed, and the people are beginning to realize that some of the medicines widely advertised as harmless contain dangerous substances, while others claiming powerful action, consist of inert and harmless mixtures.

When the truth dawns on the public that in patent medicines it is all in the advertising and the principal good accomplished is the stimulus to the circulation of money by the commercial side of this evil, the sale of such so-called remedies will grow less and less.

FREE-DISPENSARY SERVICE.

The Bureau of Health has maintained three dispensaries in the city of Manila; one at the Central Office, one at the San Lazaro Hospital, and one at the Civil Hospital; besides, there are five smaller dispensaries corresponding to the number of health stations. In each of these stations surgical and medical clinics are held daily by the municipal physicians and medical inspectors.

The Bureau has supplied the St. Luke, the St. Paul, the Methodist, and the Philippine Medical School dispensaries with certain quantities of drugs to be used in their respective clinics.

In the central dispensary alone, 26,750 prescriptions were filled.

The masses of the Filipino people are gradually deserting their "mediquellos," whose diagnoses and methods of treatment are relics of barbarism, and are turning to the regular physicians. It may just as well be stated here as elsewhere that the Filipino physicians, greatly to their credit, are very little tainted with the false doctrines and delusions of the irregulars, and that they have been largely instrumental in standardizing and elevating the methods of medical practice in this portion of the Far East.

PUBLIC MARKETS OF MANILA.

The long-continued controversy between the Bureau of Internal Revenue and the department of sanitation and transportation of the city of Manila with regard to the extent of authority over the public markets of Manila, has now been placed on a definite and satisfactory basis. The work of renovating and regulating the markets of the city has been undertaken by the department of sanitation and transportation, on the completion of which, the administration of all the markets will be turned over to this department by the Bureau of Internal Revenue. At the present writing, the markets of Quinta and Sampaloc have been completed, and are under the control of the department of sanitation and transportation. Work on the Divisoria Market is under way, and will probably be completed in the course of a few weeks, at which time the department will take control.

The collection of the market fees, of course, still remains with the Bureau of Internal Revenue.

The Bureau of Health has been particularly pleased with the system of administration adopted, and with the promptness with which the chief of the department of sanitation and transportation, Mr. J. C. Mehan, has carried out the suggestions of this office with regard to certain features of public sanitation.

The improved conditions in no wise reflect upon the former management, but go to prove that the highest state of efficiency can not be obtained when there is embarrassing intermingling of authority.

PROVINCIAL MARKETS.

In the report of this Bureau for last year, under the subject of provincial markets, attention was called to improvements that had been brought about in the sanitation of this class of public institutions. Under the new system, the sanitary conditions of the market must be reported on by the local sanitary officers. These reports go to the district health officer who sees that the cause for complaint, if any, is removed.

Market venders are required to keep their perishable and easily-contaminated food stuffs covered so as to avoid infection from flies or roaches.

The little points of market sanitation are continually being urged lest the people forget and conditions drift back to their former status.

The construction of modern permanent market buildings has been undertaken in many of the provinces, and they mark a distinct step in advance in permanent sanitary improvements. Among the municipalities that have constructed new modern markets should be mentioned Pasig, Malabon, and Baguio.

The Moro Government has established in Zamboanga district more than half a hundred Moro exchanges or markets. These institutions are kept in a cleanly attractive condition, and serve as a clearing house for the industries of the Moro people. There has been great improvement in the habits and customs of the people with respect to market sanitation in the majority of municipalities.

PUBLIC CLOSETS.

The frequent recommendations of the Bureau of Health that the number of public closets be increased have finally received recognition in that the Municipal Board has recommended the setting aside of sufficient funds to install at least twenty-five of these public conveniences in different sections of the city.

DISPOSAL OF NIGHT SOIL.

The question of the proper disposal of night soil in the city of Manila will be settled when the new sewer system, now well along in the course of construction, is completed. The filthy practice of the Chinese market gardeners in sprinkling a solution of night soil over growing vegetables led to the passage of Act No. 1226, which absolutely prohibits any market gardener, farmer, or other person from making use of human excreta as a fertilizer for crops of any kind. This act was passed as a preventive measure against cholera, and has been productive of great good; nevertheless, the restricted utilization of night soil as a fertilizer for nonedible plants is not objectionable, and could be rendered profitable and harmless by proper treatment, as is evidenced by the fact that the city of Hongkong realizes ₱75,000 a year selling this material for fertilizing purposes, while Tokyo adds annually ₱3,000,000 to its treasury from the same source. Night soil is rendered innocuous by burying it for several months in deep, well-protected pits, in order that it may be exposed to the action of nitrifying organisms. The level of the top of these pits is at least 6 feet below the level of the ground surface, which makes it possible to cover them over so as to prevent the escape of noxious odors. As soon as the matter has been thoroughly digested by the bacteria, the pits are opened and the resultant mass sold for the fertilization of mulberry trees on the leaves of which silkworms are fed. Experiments conducted by the Bureau of Science have demonstrated that silk culture is feasible in the Philippine Islands, and could be made a profitable industry.

Now, inasmuch as practically all the provincial towns are without satisfactory means of night-soil disposal, the burden of the work falling upon wandering pigs who are more faithful than cleanly in their habits, this office can see no reason why the municipalities, acting under proper instructions, might not conserve this material, convert it into a harmless fertilizer, and utilize it in the fertilization of mulberry trees, for feeding the silkworms. The silk industry can and ought to be made one of the chief industries of the Philippine Islands. This office is ready to coöperate with any movement of this kind, provided it is safeguarded by proper sanitary precautions.

SUPERVISION OF PILGRIMAGES.

The sanitary supervision of all the pilgrimages and fiestas held throughout the Philippines would be an impossible task with the present force, so the efforts of the Bureau in this direction are limited to the larger assemblages which nearly always involve grave danger to the public health. The smaller gatherings necessarily have to be left to local supervision. Notwithstanding all that has been done in this direction, these ancient customs of the country are still important factors in the diffusion of cholera. These occasions bring together thousands of people, men, women, and children, of all ages and conditions of life, who, for the time being, forget everything else save the festive pleasures in which they join with a zeal that knows no danger. Feasting is one of the essential features of such gatherings. Food is brought from cholera-infected districts and even from invaded homes, and with that sincere hospitality so characteristic of the Filipino people, is distributed to all who will partake. Close communion forms no part of the social creed of the country.

Patients in the incubation stage of cholera often freely mingle with the well, and since the means for the disposal of the excreta of so large a number of people are inadequate, it will be readily seen how the disease may be spread by means of these festive gatherings.

On examining a cholera route map a few days after one of the fiestas has taken place, it may often be observed that the lines of infection radiate in all directions like spokes of a hub, corresponding to the homeward routes of the people.

Consideration for the religious sentiment, respect for time-honored customs, and the disinclination to oppose the commercial interests of the numerous small merchants who profit by these occasions, naturally make the local officials timid in exercising such authority as would interfere with the convenience, pleasure or comfort of their fellow townsmen or their guests; thus, many things which should be done are passed over.

The pilgrimages to Antipolo on the occasion of the celebration of the feast of "Nuestra Señora de Paz y Buen Viaje," in which vast concourses participated, estimated at 10,000 persons or more per day, have demanded the closest supervision in the past. At such times, arrangements were made with the city of Manila for the installation of a temporary pail-conservancy system. Sanitary supervision and inspection were also placed in operation under a medical inspector of the Bureau. The problem was simplified this year by a general conflagration which destroyed the town just as the fiesta was about to be opened, and very few people celebrated during the last season. Notwithstanding, the grounds became insanitary through the lack of latrine facilities. This condition, however, was corrected after a number of conferences with the local officials.

THE PHILIPPINES CARNIVAL.

The Philippines Carnival was held in the city of Manila February 27 to March 3, inclusive. Dr. Percy L. Jones, captain, Medical Corps, United States Army, was appointed chief sanitary officer of the Carnival. He had been connected with the sanitation of the Jamestown Exposition in the United States, and was especially prepared for his assignment; and to him is due the excellent sanitary condition in which the grounds and buildings were kept. The Sanitary Code of the city of Manila was used as a basis on which to work, and it was found sufficient to cover all questions that arose. Inspectors from the Bureau of Health and the city of Manila were detailed to aid in the work. The removal of garbage, night soil, rubbish, and other waste matter was carried out by the department of sanitation and transportation. Public closets were installed, and distilled water used for the preparation of drinks and general drinking purposes. The sale of food stuffs which might be easily contaminated was prohibited. An emergency hospital of six beds was established on the grounds. In spite of the fact that probably as many as 10,000 people were in the grounds at a time, no case of cholera was contracted there, although the disease was present in the city.

MEDICAL INSPECTION OF PUBLIC SCHOOLS.

The primary object of medical inspection of school children has for its purpose the prevention and suppression of communicable diseases. No state or government is justified in enacting compulsory school laws to enforce the attendance of children at schools until it gives its official guaranty that every reasonable effort will be made to render such institutions safe places for the care, comfort, and instruction of the pupils. The school life of children is a formative period and the forces, mental, moral, and physical, which make for their future weal or woe, for character or moral chaos, for health and happiness or disease and sorrow in the lives of those who are being trained for future responsibilities and duties, should be the object of profound solicitude to those who are charged with the preparation of the youth of the land for citizenship. These forces involve such questions as the influence and aptitude of teachers, the proper location of school buildings with regard to pure air and good drainage, the construction of the buildings themselves, the regulation of window space, the direction of light, and the facilities for orderly exit in case of danger. The question of overcrowding, the use of poor drinking water, the providing of clean, attractive lavatories and closets, and the maintenance of the same in a sanitary condition, the proper slant and height of school desks, and the position of the body of the child, are all features of the question which directly and indirectly influence the public health. Many of the most distressing and humiliating diseases incident to human existence can be traced to the school life of the sufferers.

The protection of the pupils against dangerous communicable diseases is a duty of the profoundest importance and belongs both to the domain of the sanitarian and the school authorities. Medical inspectors of public schools can not work in opposition to the convenience and sympathies of the teachers of the community. There must be coöperation and mutual interests. The school is chiefly for educational purposes and the utmost tact and patience are required in the adjustment of the questions which may arise.

Medical inspection of the public schools of Manila was first begun under the auspices of this Bureau during the year 1905, but was abandoned on account of the outbreak of an epidemic of cholera which necessitated the presence of the medical inspector in charge of this work elsewhere.

The work was again resumed in 1906 by the employment by the Bureau of Health and the Bureau of Education jointly of a lady physician, Dr. Anna D. Peck. After a system had been decided upon and placed in thorough working order, Dr. Peck was transferred to the Bureau of Education, and the item of medical inspections of public schools made permanent in the expense estimates of that Bureau.

According to the official reports of the medical inspector of schools, 22,300 cases were recommended for treatment during the fiscal year. These cases were taken care of principally at the health stations of this Bureau, and also by the University, St. Paul, and Civil Hospitals. There were also several dental cases which were cared for at the free dental dispensary of the St. Paul's Hospital.

The statistics as prepared by the medical inspector of schools are published in the Appendix to this report.

DEAF MUTES.

The Bureau of Education has established a school for deaf mutes, in which the pupils are taught to read and write and to converse by means of the deaf and dumb alphabet. The girls learn to sew and cook, and the boys are instructed in the use of tools or in whatever work they like best. In times gone by, such pupils were classed as "foolish" and no effort was made to improve their condition. From the health officer's point of view, this feature of the educational system is of the highest importance and ought to be extended to the provinces.

PUBLIC AND PRIVATE CHARITIES.

Not an inconsiderable amount of the energy of the Bureau of Health is taken up with the administrative work entailed by the appropriation which is made each year for public charity. This fund amounts to about ₱80,000, and provides clothing, lodging, and subsistence for over four hundred people, and outside relief to some thousands of others.

The medical officers of the Bureau of Health have charge of the admission of the patients for which the Municipal Board has contracts with the San Juan de Dios and the St. Paul's Hospitals and the Philippine Medical School, a total of 150 beds being available in addition to the relief mentioned in the preceding paragraph.

The University Hospital, the Mary J. Johnston Memorial Hospital (for women and children), the Chinese Hospital, all private institutions, and the Philippine Civil Hospital, the San Lazaro Hospitals (communicable diseases, insane, and drug habits), and the health stations, all Government institutions, are working for the upbuilding of the Filipino people. The Bureau of Health has a contract with the Hospicio de San José for the care of indigent orphans and old people.

This spirit of helpfulness has pervaded the provinces. The mission districts are being supplied with medical missionaries, and every effort is being made to demonstrate the benificent purposes of the American Government and the grandeur of American citizenship.

The extent of the charities of the Government and of the various religious orders and churches is remarkable, especially when it is remembered that with all that has been done, the native has not been deprived in any degree of his self-respect and pride.

MEDICAL EXAMINATION OF IMMIGRANTS.

This branch of the sanitary work is conducted under the provisions of the United States immigration laws, and is performed by the medical officers of the United States Public Health and Marine-Hospital Service. During the year 7,864 aliens were examined, and 51 rejected. The rejections for the most part were on account of trachoma.

The more virulent form of trachoma is scarcely known in the Islands, and the exclusion of aliens who are afflicted with it will do much toward preventing this disease, which is responsible for 15 per cent of the blindness in the United States, from gaining a foothold.

INSULAR QUARANTINE.

Insular maritime quarantine is exercised through the local health and municipal officials throughout the provinces, except at ports of entry, at which places United States Quarantine officers are stationed. It has seldom been necessary to impose quarantine through the means of local health officers, because vessels which are affected by it practically always came under observation at a port of entry, where the quarantine officers perform the necessary service.

At the port of Manila, an outgoing quarantine was imposed upon inter-island vessels for the greater part of the year, in order to prevent the spread of cholera to other islands by maritime routes. This proved entirely effective. The imposition of general land quarantine has been entirely abandoned because it is ineffectual when not supported by military force, a policy that is deemed inadvisable.

VACCINATION.

The stupendous figures of 1,686,767 persons vaccinated during the year are again conclusive evidence of the large amount of sanitary work being done, and it is believed that in no other country has so large a percentage of the population been vaccinated in the same length of time.

The systematic method of vaccinating has again thoroughly proved its advantage over the methods employed during the first years of the Board of Health. More than three times as many persons were vaccinated with the same amount of money. It now costs approximately 2½ centavos per capita, while formerly the cost was 7½ centavos or more per capita, and the later results are fully as good. It will be noted that this improved administration has resulted in the saving of many thousands of dollars to the Government.

The vaccination of so large a number of persons in the Philippines during the last year without a death is striking evidence of the care with which vaccine is prepared and applied. Voight reports that in Germany one death occurred in 65,000 vaccinations. Even at this rate, it is better that one should die in order that 65,000 might live and avoid disfigurement.

The mortality from smallpox among Filipinos is usually from 5 to 10 per cent, while among Americans and Europeans it is often 75 to 90 per cent. The greatest error with which any person can delude himself, and the one on which false beliefs of personal immunity are based, is that, because he has repeatedly been in the presence of the disease, and has not taken it, he is immune. Others delude themselves with the idea that one successful vaccination, perhaps in infancy, is protective for all time to come. If the tenets of the believers in "New Thought" and Christian Science were effective, this class of people would never have smallpox, for surely no bigotry could be more pronounced than that manifested by the anti-vaccinationists of the Philippines. It seems almost increditable that in spite of the absolute proof that effective vaccination practically makes smallpox impossible, there should still be dissenters.

If the so-called special visitations of Providence for the purpose of convincing people of their error could be logically considered in the category of sanitary measures, the awakening realization of the thoughtful sanitary sense of the people caused by a virulent epidemic is productive of enough good to warrant more than a passing thought on the things that happen for reasons beyond the scope of human knowledge.

In regions, remote and difficult of access, to which it is impracticable to deliver vaccine virus in a fresh state, the blame must rest with the conditions and not with the people. In these sections it is not likely that a complete disappearance of the disease will occur until improved methods of preserving vaccine virus are devised.

Between the months of November and March, considerable difficulty was encountered in supplying a potent vaccine. A committee composed of a representative of the Bureau of Science, one from the Medical School, and one from the Bureau of Health, was appointed in April for making a study of this question, but up to the close of the year the report had not been rendered. During March new strains of virus were imported from Japan and Saigon, and shortly after this the potency increased, and the number of takes among all classes, vaccinated and unvaccinated, is again above 50 per cent. (For complete statement as to numbers and results, see the statistical tables in the Appendix).

The Bureau of Health has nothing to retract with reference to the importance of vaccination, and will continue to urge it on the people as one of the most effectual prophylactic safeguards known to medical science.

The Iowa Health Bulletin, in a recent number, took up the subject of statistical proof of the protective influence of vaccination, and showed documentary evidence to support all that was claimed was not wanting. According to this evidence, London has records reaching as far back as 1629, and Genova as far back as 1850. In other countries, while the records are not so comprehensive, they are sufficient to give an idea of the prevalence of smallpox before vaccination. In England, the rate was about 3,000 per million; in London it was over 4,000 per million. Now the rate is less than 20. In Prussia the rate before vaccination was slightly over 4,000, but on the adoption of vaccination it began to suddenly decline, and continued to do so until the vaccination law of 1874 was enforced, when the cases became fewer and fewer until now the the rate is less than 2 per million. Sweden had a death rate from smallpox for sixteen years prior to 1800 of 2,049 per million, while the rate from 1802 to 1811 under voluntary vaccination fell to 623. In 1816 compulsory vaccination was enforced and for the next ten years the rate was 133. By 1899, one hundred years after the vaccination began to be practiced, the death rate had fallen to 1 per million. Compulsory vaccination has been in force in France only since 1902, the rate of smallpox in the army being now 4 per 100,000. Vaccination was introduced in Austria in 1808, and was optional until 1900, when all school children were required to be vaccinated before entering. Vaccination and revaccination are compulsory for the army and navy. Denmark, since 1810, has required all children to be vaccinated before the seventh year. Revaccination is compulsory for the soldier and inmates of public institutions. Italy has had compulsory vaccination since 1888. All children are required to be vaccinated within the first six months, and, if this is unsuccessful, to be revaccinated before they are a year old. Before the law was in effect the death rate for smallpox was 610 per million; in 1902 it was 9.7 per million. In Belgium and Holland it is not compulsory, although all public officials and the army are required to be vaccinated. In Holland, while not obligatory, all children must go to school, and no child can attend without being vaccinated. The teachers also must be vaccinated. India prohibited smallpox innoculation in 1880, and made vaccination compulsory. Similar laws are in effect in Austria, New Zealand, and Cape Colony. Vaccination is optional in Russia, except in the army and public service. The great majority of the people do not avail themselves of vaccination, so epidemics are not uncommon. In Persia, Siam, and China little vaccination is done; therefore smallpox is endemic. Japan has enforced compulsory vaccination since 1886, whereby the greater portion of the population has been vaccinated and revaccinated, thus restricting the disease almost altogether to the floating population which actually escapes vaccination. No provisions are made in any of the cities for smallpox hospitals proper. When a case develops, it is usually allowed to remain at home, or taken to a general hospital for treatment. No quarantine measures of any kind are enforced. The same also may be said with regard to the German Empire, where no precautions are taken in the strict sense of the word against the spread of smallpox, the whole reliance being upon vaccination. It has been stated by those who opposed vaccination that the reason why the German Empire was so free from smallpox was the superior facilities for the isolation and treatment of cases, and not vaccination. This was investigated by the local Government board to ascertain just what methods were employed by the Government and municipalities for the prevention of smallpox. Accordingly, an agent was sent to make this investigation. He encountered serious difficulties from the first. In Berlin, he was informed by the central health officer that so far as it was known, there were no smallpox cases in Germany. The principal cities of the four chief states of Prussia, Bavaria, Saxony, and Wurttemberg were visited. In ten cities of these states, containing a population of over 5,000,000, or one-tenth of the population of the German Empire, he did not find a single case. As a matter of history, he ascertained that there had been 70 cases in seven years, 1895 to 1901, inclusive; in Cologne, 1 case in ten years; in Frankfort, 9 cases in ten years; in Wiesbaden, 12 cases eleven years ago, but none since then; in Mainz, none during eleven years; in Munich, 7 cases in eight years; in Nuremburg, none for about eleven years; in Dresden, no deaths for the past ten years, in Leipsic, 8 cases in eight years; and in Stuttgart none in six years.

Vaccination in the United States is not compulsory. It is, however, made obligatory in many of the States and municipalities, but this ordinarily applies only to school children. Children are debarred from attending school unless they are vaccinated. While vaccination is generally practiced, there are many of the population, particularly in our southern States, among the negroes, who do not vaccinate, and for this reason, smallpox is not an uncommon occurrence among them.

The United States Government now requires that all alien immigrants shall be vaccinated before being allowed to land. This has been the means of reducing the danger from this source almost to a minimum.

The vaccination law of the Philippine Islands requires that every person living in the Archipelago who can not furnish satisfactory evidence, either by certificate of recent date from a president of a municipal board of health, public vaccinator, duly qualified physician, or such other person as the Director of Health may designate, to the effect that he is immune against smallpox, shall submit to vaccination as often as may be required by a municipal board of health, or by a district health officer, or by the Director of Health. This requirement at first sight appears to be perfectly satisfactory, but the trouble is the different and various interpretations placed on the word immune, and the ease with which certificates of immunity may be had. A person perhaps may be immune to-day and susceptible to-morrow, or vice versa; therefore, the only safe precaution is to be vaccinated as frequently as practicable, unless a recent successful vaccination has been performed.

MOSQUITO PESTS.

Owing to the fact that malaria is practically never contracted in Manila, not much money has been expended for exterminating mosquitoes. It was felt that money available for purposes of this kind would yield more concrete results when devoted to vaccination, the value of which is not in dispute. Residents of swampy, undrained sections of Manila continue to suffer annoyance from the *Culex fatigans* at night, and the *Stegomyia fasciata* in the daytime. However, it is proper to state that lowlands, when practicable, have been caused to be filled in or drained, and oil has been spread on stagnant pools and ponds which could not be subjected to more drastic measures. These methods are very effective and when properly applied are not cumbersome, but they are as yet too expensive to urge upon the small towns. Some method of more general application is needed. The merits of various culicides are now under investigation by the hygienic laboratory of the United States Public Health and Marine-Hospital Service. In a report which was published in the Public Health Reports, June 29, 1906, it was asserted that the fumes of pyrofume, a liquid derived from the fractional distillation of pine wood, are deadly to *Stegomyia calopus* and *Culex pungens*. Mosquitoes placed in cages in the floor of a room containing the fumes from 265 cubic centimeters of this liquid to each 1,000 cubic feet of air space were found dead after one hour.

The preliminary studies inaugurated by the Surgeon-General comprised a series of experiments on the culicidal properties of camphor-phenol, sulphur, and pyrofume.

In the experiments, great care was taken to protect artificially the mosquito in such a way as to simulate the conditions which ordinarily aid it in avoiding the effect of harmful gases. The experiments confirmed the reputation gained by sulphur in quarantine practice. Camphor-phenol appeared to be uncertain in its action and not possessed of powers of penetration and diffusibility, especially in low temperatures. As a result of the further experiments with pyrofume, it was determined that the fumes of this agent, when generated in the strength mentioned, are deadly, when the mosquitoes are exposed in a cage on the floor in the open; but when they are artificially protected, the amount of pyrofume must be increased to such an extent as to be injurious to the furniture.

Sulphur must be relied upon for the present as the most efficient insecticide, though it, too, is, in a measure, destructive. It is believed that a reliable and safe culicide will be eventually discovered. When this is done, the mosquito problem will have been completely solved in the Philippines and everywhere.

CIVIL-SERVICE MEDICAL EXAMINATIONS.

The civil-service medical examinations are divided between the Bureau of Quarantine Service and the Bureau of Health, the former examining applicants for maritime positions, the latter for land positions.

Examinations by the Bureau of Health are made by a medical inspector detailed from the regular force, who devotes one hour each day to this work.

From August 16, 1907, to the close of the fiscal year (period from July 1 to August 15, 1908, included in last annual report) there was a total of 516 persons examined by this Bureau, 453 of whom were passed, and 63, or more than 12 per cent, rejected. The respective occupations were represented as follows:

Character of examination.	Number examined.	Number passed.	Number rejected.	Percentage of rejections.
Junior surveyor	8	8	0	0
U. S. Coast and Geodetic Survey service	24	16	8	33⅓
Mechanics	15	13	2	13
First-class policemen, American	43	41	2	5
First-class firemen, American	38	33	5	13
First-class guards, American	34	30	4	12
Second and third grade examinations, Filipino	204	188	16	8
Third-class policemen, Filipino	92	77	15	16
Third-grade firemen, Filipino	17	10	7	41
Third-grade guards, Filipino	41	37	4	10
Total	516	453	63	12

The physical requirements are being more and more stringently enforced in order that the public service may not be embarrassed by that species of Government employee invalidism that is frequently found among public servants elsewhere.

Tuberculosis is one of the more frequent causes of rejection, and heart lesions and trachoma are also frequently found.

STREET PAVING.

When the Americans came to Manila they found a few of the principal streets of the city paved with large cobblestones over which the native vehicles rattled with careless abandon and deafening noise. In the Escolta and Calle Rosario, ambulances containing patients had to proceed at a walk even with emergency cases, in order that further injury might not be inflicted. These two streets being the principal business thoroughfares, were the first to receive the attention of the department of street construction and repair. It caused the stones, which were separated by cracks difficult to keep clean, to be replaced by wooden blocks, which gave a smooth, even surface, easily cleaned, so that these streets presented a neat appearance. These, after a few years' service, have, in many places, so decayed as to constitute a menace to the public health, as the holes and depressions become filled with dirt, and present an unsightly appearance as well as unsafe surface.

A smooth, durable street paving for Oriental cities which is at the same time sanitary, does not yet appear to have been found. Asphalt, owing to the continuous heat, becomes so soft that the depressions of the horses' hoofs and of the wheels of the vehicles make an uneven surface. It is believed, however, that further experiments should be made with asphalt with the view of producing a more durable surface. At present it is proposed to use wooden blocks which have been impregnated with creosote under pressure.

NEW SEWER SYSTEM.

During the year, 24.4 miles of street sewers were laid, which, added to the 14 miles laid last year, makes a total of 38.4 miles. The total amount contracted for was 52 miles, so that only 13.6 miles yet remain to be laid.

The contracts for the pumps and pump houses have been let, and some of the work is actually under construction. Before the close of the fiscal year, which ends June 30, 1909, the new system will, no doubt, be in working order, and it is hoped that the majority of the noisome wagons and other primitive methods for the disposal of night soil will be a thing of the past. Upon the completion of this enormous sanitary undertaking, Manila will rank as the first city in the Orient to have a complete water carriage system for the disposal of sewage, and therefore compare favorably with the western world in this respect.

SWEEPING PUBLIC BUILDINGS.

On account of the danger of transmitting tuberculosis and other diseases by the means of dried sputum which accumulates on the floors of public buildings, the following letter has been addressed to the Executive Secretary:

MANILA, P. I., *March 25, 1908.*

The EXECUTIVE SECRETARY, *Manila.*

SIR: I have the honor to hand you herewith copies of a circular on the subject of cleaning of public buildings, with regard to the danger involved therein, and to request that you forward the same to the chiefs of the various Bureaus, in Manila, with a view to having the recommendations therein adopted.

Very respectfully,

VICTOR G. HEISER, *Director of Health.*

[Copy of circular.]

DEPARTMENT OF THE INTERIOR,
BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS,
Manila, March 24, 1908.

It has been noted by this office that in the routine cleaning of the various Government office buildings in Manila a vast quantity of dust is raised and that such cleaning is frequently begun while many employees are still at their desks. By reason of the prevalence of tuberculosis in the Philippines, and of careless habits in spitting, such dust contains numbers of tubercle bacilli, which are the active agents in the production of tuberculosis and which gain access to the body through being inhaled. To begin sweeping while employees are still in the building forces such employees to inhale the germ-laden dust, which can not fail to be productive of disease.

It is therefore respectfully requested that the attention of the persons supervising the janitor service in the various public buildings, be invited to this matter, and that the practice of sprinkling the floors thoroughly with wet sawdust, before sweeping is begun, be adopted as a routine, and that the sweeping be begun only after the building is vacated.

VICTOR G. HEISER, *Director of Health.*

The method is so simple, inexpensive, and effective, as proved by the experience in the public buildings in which it was immediately put into operation, that it is recommended as a general measure.

In addition to the feature of safety, which alone is sufficient to commend it, the saving of labor and time spent in dusting more than compensates for the slight preliminary trouble.

INFANT MORTALITY.

Notwithstanding the fact that the subject of infant mortality has been given more attention by this Bureau and by the various philanthropical societies of Manila than any other question that has come up for consideration, the death rate among young children still continues very high.

Not only has this subject engaged the attention of health organizations and societies in the Philippine Islands, but in other parts of the world it has been a topic to which even presidents, kings, and emperors have given heed.

In all the large cities of Europe there exists societies for combating the causes which determine the excessively high death rate among the children of poor people. In the United States where the conditions are more favorable, the exigencies of the situation have not been sufficiently alarming to awaken public interest so generally as in countries less fortunate, yet there is nevertheless an enthusiastic movement for the better protection and care of infants. Nature evidently intends that every child born shall take part in the great drama of life, and live until all the purposes which called it into existence have been satisfied. So determined is she that the success of her plans shall not be impaired, that she has apparently established a law fixing a direct ratio between the birth rate and the infant mortality rate.

So far as the effects upon the census statistics is concerned, a high death rate among infants, unless brought about by epidemic diseases or other special causes, does not alarm the health officer, as he knows that it will be offset by a higher birth rate; but no one wants the children to live more than he, because he realizes that the bearing of healthy children is a blessing to womankind, and to the world at large, while the bearing of sickly children soon to die is a misfortune to humanity and that it incites unfavorable criticism on those entrusted with the supervision of the public health. The tiny graves in the cemetery are seen by many, but few hear of the efforts by self-sacrificing physicians and the faithful workers in the children's cause to prevent these graves.

In Manila where the statistics show that 4,184 children under one year of age died during the year, or as estimated, about 44 per cent of the total number of deaths, there has been as much done by the health authorities, by the Gota de Leche Society, by the churches, by the schools, by charitable people, and by physicians as in any city of equal size in the world.

In the Meisic public school, in the domestic science department, mothers are invited to bring in their children and then in the presence of the class the whole subject of infant feeding is demonstrated, from the value of a balanced diet to the care of the containers in which the milk is kept.

Flannel for the protection of infants has been distributed gratis from all the health stations. This Bureau has encouraged the formation of an obstetric department in the Philippine Medical School in order that midwifery might be properly taught.

In the Gota de Leche Society sick babies are being fed, and the hygiene of the body is being taught to Filipina mothers.

The district health officers from the outside have been called in for consultation with a view of organizing similar societies in the provinces. The churches have taken up the question; pamphlets have been written by Filipino physicians, translated into all the dialects and given extensive circulation at the expense of this Bureau, yet the visible results are few; but the foundation is being laid and the structure of a stronger generation being built.

Recent investigations by this Bureau have revealed the fact that a large proportion of the inhabitants is suffering from intestinal parasites, especially the hookworm, which produces a condition of anemia and weakness which is transmitted as an effect to the offspring of parents so afflicted. Active measures are to be taken to combat this condition, and it is believed that results will show favorably in the children to be born, making them more resistant to diseases and thus prolonging their lives.

AMBULANCE SERVICE.

The Bureau of Health and the police department of the city of Manila coöperate in conducting the city ambulance service, the latter handling the emergency cases, and the former looking after the transportation of cases of dangerous communicable diseases, and also of cases for the Civil Hospital. Arrangements have been made to extend and concentrate the facilities of the service. A central station is to be established near the Bridge of Spain, and the latest modern motor cars will be installed. These cars will not be characterized by distress or horror signals and the clanging of bells, but will pass quietly through the city on their missions of mercy, without attracting attention. One of the first official acts of the present Director of Health was to eliminate the pyrotechnic display in the ambulance service.

The improvements now being introduced will decrease expenses and increase the efficiency of this important branch of health work.

ANTHRAX.

Considerable public attention was drawn to the disease of anthrax during the month of October on account of cattle suffering from this disease being found among these imported from Hongkong. This immediately led to the question as to whether there was any danger of the disease spreading to human beings, and as to whether any human cases had heretofore occurred in the Islands. In view of the fact that the hides are not extensively handled here nor manufactured into leather, and that only the meat of anthrax cattle would be of particular danger, it was thought that human beings were not seriously menaced by anthrax from importations of cattle under existing conditions.

Several cases of human anthrax have been reported in the Philippines, but the points at which they are said to have occurred are so remote that no microscopical examination could be made, and in view of the common custom of local physicians to refer to ordinary carbuncle as anthrax, it would seem to indicate that in all probability the cases which were reported were not due to the bacillus of anthrax.

BERIBERI.

Beriberi has been a very serious matter in the Orient. Prior to 1884 an average of 33 per cent of the available strength of the Japanese navy was entirely disabled on account of this disease. During the war with China in 1894, about 45 per cent of the Japanese army was disabled for actual warfare by this malady. The reports of the same army in 1904 and 1905 show that one-half of the sickness and practically one-quarter of the entire sick and wounded consisted of those ill with beriberi, the total number of such cases being about 85,000.

The disease must be reckoned with in other directions than military operations, as it is also a factor of considerable influence in many public and private enterprises. It is met with in the mines of the Federated Malay States, and among the laborers of Java. It prevails also to a certain extent in the Philippine Islands, especially in camp life. In the public institutions, such as jails and prisons, it is much less known than formerly. The number of cases in the Philippines can not be approximated with accuracy, as it is by no means a necessarily fatal disease. Many patients are cured by change of residence and a change of diet, thus showing that the food question in relation to this disease is still a pertinent one. Whatever may be the real cause, it must be admitted that overcrowding, bad ventilation and improper food strongly predispose to the disease.

Dr. L. H. Fales, of Madison, Wisconsin, formerly a medical inspector in this Bureau, says that a study of an epidemic which occurred in

Bilibid Prison during his connection with that institution seemed to point to the lack of fresh vegetables rather than the small proportion of nitrogenous food, as the determining cause of the disease, for the following reasons:

1. Those who had access to the preparation of the vegetables and had the opportunity to take more than their share of them had no beriberi.
2. When the vegetables were almost entirely discontinued for a time as a part of the ration, the mortality from beriberi became higher.
3. Some months after the epidemic had been under control, prisoners from the prison, many of whom had had beriberi, were sent to work on the Benguet Road. So many of these were attacked by beriberi that it was found useless to try to use them, and they were returned to the prison. Information at the same time was received that they had been provided with scarcely any vegetables.
4. At the time of the epidemic of beriberi in the prison, many of the prisoners suffered with a peculiar form of sickness which was believed to be scurvy. The number of these cases exceeded 50. There was gradual loss of strength, the gums became red, spongy and swollen, there were extensive hemorrhages into the muscles, usually into the muscles of the leg. The hemorrhages would be followed by marked induration. The muscles became almost board-like in their consistency, and the patient could walk only with great difficulty. On post-mortem, hemorrhages were found in various parts of the body. One case of hermopericardium was noted. On the addition of lemons to the diet of these patients, or increasing the vegetables, they recovered. There is no doubt, therefore, that with the epidemic of beriberi we had an epidemic of scurvy, although in much smaller proportion.

The number of deaths from beriberi in the city of Manila for the period covered by this report is 514 as against 423 for the preceding year.

CANCER.

The subject of the prevalence of cancer in the Philippine Islands has been carefully studied by Dr. F. W. Dudley, formerly of this Bureau, but now associate professor of surgery in the Philippine Medical School, and attending surgeon to the St. Paul's Hospital, whose conclusions as published in a recent number of the Journal of the American Medical Association are that—

1. Cancer is not confined to temperate climates;
2. It is believed that cancer exists in the Philippines to a greater extent than in the United States;
3. The measures now being taken in other more enlightened countries to warn the people of the necessity of early diagnosis and to emphasize the importance of early surgical treatment should be adopted here;
4. The disease is of sufficient importance in the Philippine Islands as to warrant an effort being made to obtain better statistics in the future.

The records of the surgical clinic at St. Paul's Hospital show that since the establishment of the hospital April 8, 1905, to June 30, 1908, a period of a little more than three years, 55 cases of carcinoma were treated. These cases came under the following classification: Tongue, 1; face, 1; breast, 7; cheek, 8; cervix uteri, 9; eye, 4; inferior maxillary, 3; buccal cavity, 5; larynx, 1; pancreas, 4; penis, 1; scrotum, 1; rectum, 2; stomach, 4; leg, 1; lip, 1; foot, 2. There were 25 admissions for sarcoma, classified as follows: Pancreas, 1; ear, 1; mastoid, 1; parotid gland, 2; metatarsal bone, foot, 2; neck, 6; femur, 1; tibia, 1; cranium, 3; orbit, 1; testicle, 5; arm, 1.

The portent of these statistics is modified by several factors that deserve to be taken into consideration, among which is the reputation of the surgeon as may be inferred from the fact that, of the patients presenting themselves, about two-thirds were too far advanced for any treatment, thus showing that the majority of the patients were finally led to apply for relief through the reputation of the clinic. These people probably came from all parts of the Islands, therefore it would be inaccurate to estimate the real prevalence of cancer in Manila upon the basis of the number of cases recorded in the hospital reports of the city, or to judge the situation throughout the entire Archipelago from such data. The provincial statistics are of but little value and they embrace under the same classification all forms of malignant growths, including, frequently, the lesions of lupus.

The total number of deaths from cancer in Manila, a city of about 225,000 inhabitants, for the fiscal year, according to the Bureau of Health statistics, was 73, classified as follows: Buccal cavity, 15; stomach and liver, 10; peritoneum, intestines, and rectum 3; female genital organs, 13; breast, 5; skin, 6; not specified, 21.

Cancer patients from every part of the Islands are sent or come to Manila in the last stages of the disease, and are either admitted to the hospitals to die, or are cared for by their friends and relatives. The Filipino idea of a hospital, handed down from Spanish times, is that such an institution is a place for the administration of extreme unction, and for effecting the change called death; hence his journey thereto is a final pilgrimage before passing over the great divide.

There is no well-defined line between permanent and transient residence in the Philippines, especially where the question of special privileges is involved. The city of Manila has a contract with both the St. Paul's Hospital and the San Juan de Dios Hospital for the care of the local indigent sick, but probably every province in the Islands is a beneficiary of the city's generosity. At the present time there is no remedy for this, nor do the dictates of humanity or mercy call for one. But due credit, however, should be given these facts in making deductions with regard to the degree of prevalence of any disease throughout the Philippine Islands, on a basis of the hospital reports and official mortality statistics of the city of Manila.

CHOLERA.

The death rate in Manila has to some extent been augmented by Asiatic cholera, which has probably been present since the early part of the first quarter, at which time a few cases of gastro-intestinal disorders closely resembling cholera were reported, though the suspicions were not confirmed by laboratory examination. It was not until the last of July that the presence of cholera in Manila was actually confirmed by laboratory diagnosis. Since that time the disease has been more or less prevalent and during the last week of the quarter above referred to, the number of cases averaged about three daily. The disease was not confined to any particular locality as the cases were found widely separated, with no apparent relation between them. If there had been a central focus, the matter of suppression would have been simplified. Painstaking efforts were made to trace every case and connect it with some other case, and while such efforts were not entirely successful, they led to the conclusion that the most probable source of the disease was the unhealthy and filthy practice by the market gardeners of fertilizing their products with human excreta. The secret service was asked to investigate the matter and it was not long before convictions were secured, thus substantiating the conclusions which had been reached by the bureau.

During the early part of July cholera suddenly made its appearance in Carigara, Leyte, and prevailed for several weeks, the number of cases averaging about 10 per day. Owing to the indifference of the local officials, the instituting of active measures against the epidemic was considerably delayed, and it was only through the indefatigable efforts of the district health officer for Leyte, with the support of the governor of Leyte, that the progress of the disease was checked. This Bureau immediately detailed a sanitary inspector of experience to assist the district health officer, and by their efforts, the spread of the disease was limited, only two other municipalities having been infected; viz., Tunga and Barugo, which are practically suburbs of Carigara. During the latter part of August the disease appeared in Mandaon, Masbate, the infection, in all probability, having been carried there by the sailboat *Carlita* coming from Carigara. Before the *Carlita* could be subjected to quarantine regulations she had done other mischief. Cases were reported in Romblon and other near-by islands. Fortunately, the matter was taken in hand by the local officials and a spread of the disease prevented. The district health officer of Sorsogon was sent to take charge of the outbreak in Masbate and was able to limit the same to the municipalities of Mandaon and Milagros. At the close of the quarter only about two cases were occurring daily, and prospects were good for its complete extermination. Subsequent events proved the correctness of this view.

During October, November, and December the disease appeared in the Provinces of Bataan, Bulacan, Pampanga, and Rizal, there being 3, 85, 234, and 7 cases, respectively, reported from these provinces. Active measures were taken by the district health officers in charge, and during January, a decline in the number of cases was noticeable. By the first of March the disease had almost completely disappeared.

In Manila, however, the conditions were not so favorable. During the closing days of the old year, and during the first week of January, the outlook in the city assumed a rather serious aspect. Cholera increased from day to day and on the 6th day of January, 17 cases occurred. The reappearance of the disease in the city was ascribed to the reinfection by visitors who came here to spend Christmas; many of these persons, no doubt, came from infected places and were in the incubation period of the disease when they arrived here. It was also probable that some of the stools containing virulent cholera spirilli found their way into the possession of market gardeners who used them for fertilizing purposes. With regard to this latter practice, it is perhaps not generally understood that human excreta is used by the gardeners in the Philippines not so much for fertilizing purposes as for its destructive effect upon the insect enemies of the garden products of the tropics. It is used by sprinkling a solution upon the plants. From this it will be seen that a head of cabbage, for instance, may be infected from its very center to the outside as it gradually forms when daily sprinkled by cholera-infected material.

On January 3 the disease made its appearance in the Mariquina Valley, and thus the city of Manila was again most seriously threatened with an epidemic. During the first week of the outbreak, 45 cases were reported with 43 deaths. The Governor-General, upon the request of the Bureau of Health, made application to the commanding general of the Philippines Division for the detail of sufficient troops to patrol properly the Mariquina River and guard it against infection from cholera. Fortunately, the disease made its appearance first in the town of Mariquina itself, where a pail system is maintained by the city of Manila, and where there is probably reduced likelihood of fecal discharges finding their way into the water. Energetic measures were taken to stamp out the scourge in that locality and the efforts were rewarded with considerable success. During the week which followed only a few additional cases occurred and within ten days after the first outbreak no further cases were noted.

The sale of raw vegetables was again prohibited in Manila and an outgoing quarantine of forty-eight hours was placed upon all interisland vessels. This latter was completely successful in that it prevented the spread of the disease to other islands. It was not felt at any time that the disease had gotten beyond control or that there was any danger to persons who took the simplest precautions, but in order that visitors from abroad might not incur the slightest risk, it was decided to postpone the Philippines Carnival from February 3 to 9, inclusive, to February 27 to March 3, inclusive.

During March cholera made its appearance in Capiz Province and gradually spread until the towns of Capiz, Dao, Ivisan, Mambusao, Panay, Pilar, Pontevedra, and others became infected, a total of 673 cases being reported up to the close of the year. The residents of the towns of Panay and Capiz have been the principal sufferers. The local district health officer was given every facility to suppress the disease, and some thirty vaccinators who were on duty for the Insular Bureau of Health were pressed into service as cholera inspectors; but the disease continued to increase. The district health officer from Iloilo was then sent to Capiz Province for the purpose of aiding in the work. The provincial board authorized the employment of a number of sanitary inspectors and the Philippine Assembly made an appropriation of ₱1,500 to be used in exterminating the disease. At the close of the year the epidemic is apparently under control.

It was also during the month of March that cholera developed in Dagupan, Pangasinan Province, and with a view of interfering as little as possible with local autonomy the resident officials were urged to take the necessary steps promptly to suppress it. For this purpose Sanitary Inspector Brantigan was detailed to aid them, but the local authorities were so indifferent that the disease spread rapidly, and during the month of June it became necessary for the Bureau of Health to take direct charge of the situation. Seven medical officers of the Bureau were detailed for the work, but the disease had already become so thoroughly established that considerable time will no doubt be required to eradicate it.

The cholera soon spread along the main routes of travel from Dagupan, as far north as Baguio on the Benguet Road, to Aringay on the coast road, and was also carried to Santa Maria, Ilocos Sur, by *parao*, and to the west to Agno and Bolinao in Pangasinan. Along the railroad it spread as far south as Tarlac, and as far east as Cuyapo, Nueva Ecija. It has been repeatedly brought to Manila, and cases have also been found in Pampanga, Bulacan, and Bataan Provinces, but so far there has been no spread from these cases. The disease also appeared at San Nicolas and Tayug, through which passes one of the principal roads into Nueva Vizcaya. After several weeks of strenuous work some of the apathy of the local officials has been overcome, and where this has been brought about, the situation has improved immediately. In Dagupan the number of cases was quickly reduced from 17 or more per day to 3 or 4. In Lingayen the disease completely disappeared. In towns like Manaoag and Mangaldan, where there was great indifference to sanitary measures, there were several hundred cases. The aid extended by the priests of the Catholic Church and the schools in diffusing the information contained in the cholera circulars has been of great assistance, and is doubtless responsible for the saving of many lives.

The plague of flies which existed in Pangasinan Province was, no doubt, largely responsible for the great number of cases, as were also the fiestas and pilgrimages taking place in these provinces. Another cause of the spread of the disease was the fact that on account of the difficulty of communication, many remote municipalities were infected long before the knowledge reached the district health officer, so that, in such instances, very little effort was made to limit the spread of the disease until it was too late.

In spite of the fact that the conditions in Pangasinan Province are not encouraging at the close of this report, yet they are much better than in 1902. The strenuous measures which were adopted at that time did much to arouse the opposition of the people, and the passive resistance which was then engendered is still felt, and, no doubt, is largely responsible for the opposition which is made to sanitary measures. This time, as soon as the people learned that their homes were not to be burned and other costly measures were not to be taken, at least some coöperation has been received. This latter course has therefore been fully justified by the lesser number of cases as compared with 1902.

At first sight it would appear as if the diffusion among the masses of the plain, simple truth, that cholera can only be contracted by the introduction into the mouth of contaminated food or drink, and that almost absolute safety against infection can be insured by the simple precaution of using sterilized water and cooked food, would result in its early disappearance; but when it is remembered that the climate is favorable for the development of the cholera organism throughout the four seasons of the year—in other words, that there is no winter season which would at least stop the disease for a time—that a large proportion of the people are ignorant and inaccessible, that much superstition exists, that one of the most popular beliefs is in the supposed injurious character of boiled water, that the cost of fuel is comparatively high, making sterile water and cooked food difficult for the masses to obtain, that the majority of the people cling tenaciously to the mode of living which has been customary with them for hundreds of years, that food is conveyed to the mouth with the fingers from a receptacle used by all the household, that over 60 per cent of the population are afflicted with intestinal parasites, that, with the possible exception of the supply for a few hundred thousand out of a total of seven millions, the drinking water is obtained from shallow surface wells, that physically the people are weak and unresistant, and that funds and skilled physicians needed to combat this condition are very limited, it will not be so difficult to understand the continued presence of cholera in the Philippines. The funds for fighting cholera now are also very meager as compared with 1902.

It is believed that sanitarians of experience will all agree that the best hope of completely eradicating the disease from the Islands lies in the education of the masses with regard to the manner in which the infection spreads and the introduction of better water supplies. Both of these conditions are being met as rapidly as possible; the press, the schools, the churches, and the Government officials are all aiding in this work, and with the appropriation of ₱150,000 made by the Legislature, artesian wells are being bored as rapidly as the facilities of the Government will permit. From the foregoing it will be apparent that the policy of the Bureau of Health is to give consideration first to those sanitary reforms which will make cholera outbreaks impossible in the future, and only spend such sums upon combating the disease as the dictates of humanity demand.

AMŒBIC DYSENTERY.

Amœbic dysentery has been the most formidable opponent to American occupation of the Philippine Islands that has been encountered, yet it belongs to the class of preventable diseases that could almost always be avoided by adherence to simple hygienic rules. In order to insure absolute safety, elaborate precautions would have to be observed; but it may be stated from a practical standpoint that this disease is almost unknown among those who wash the hands immediately before eating, drink water only that has been sterilized by distilling or boiling and kept protected from contamination, and who do not eat in a raw state low-growing garden vegetables like tomatoes, celery, cabbage, onions, and lettuce.

The disease is not nearly so prevalent as in years gone by, but it still remains as one of the greatest causes of invalidism of Government employees, and also figures conspicuously in the Army sick reports.

The number of cases treated in the Civil Hospital for the fiscal year covered by this report is 81 as compared with 85 for last year. Of the total number of deaths in Manila, 32, or 0.34 per cent, were caused by amœbic dysentery. The native population is not exempt from this disease as has been shown by the autopsies made at the Malecon Morgue.

Rest is indicated in all systems of treatment for dysentery, and a part of the success of the ipecac method is, no doubt, due in part to the enforced rest which it enjoins. In mild cases, however, it is frequently inexpedient to require the patients to be confined to bed. The method of treatment that has generally been employed by American physicians since their advent into the Philippines has been the administration of drugs of germicidal action in dilute solution of high enemata. This treatment, while in many cases very efficient, is open to certain objections, the principal of which is the liability of injury and the difficulty of carrying out the treatment correctly unless it is administered by a physician or a trained nurse. The time required is so long and the inconvenience so great that in many cases it is desirable to alternate it with, or substitute therefor, the simaruba and sodium sulphate treatment, which is extremely simple and very effective. It consists of the administration of 100 cubic centimeters of a 50 per cent solution of sodium sulphate every second or third day and three-hour tablespoonful doses of a mixture composed of—

Simaruba pulvis	grams	3
Benzo napthol	do	3
Subnitrate of bismuth	do	8
Sirup of krameria	cubic centimeters	30
"Potion gomosa" (excipient)	do	200

The question of diet in this treatment should be the subject of attention, and when necessary, patients must be placed on liquid or semisolid food as may be indicated.

If there is collapse or acute diarrhœa, warm saline enemata should be administered every two hours until the acute symptons subside, while in the meantime the patient's bodily heat and strength should be conserved.

This treatment has the advantage of being simple of administration, comparatively free from danger, and so convenient that, except in severe cases, patients may pursue their ordinary vocations with safety.

GANGOSA.

This disease, which was recorded in the last annual report, has not figured in the mortality statistics of the present year. One case was presented to the Manila Medical Society at the meeting held on October 14. After being examined by a number of those present, the consensus of opinion was that the correct diagnosis was probably an atypical form of syphilis. The case presented no particular symptoms with the exception of a perforation of the hard palate with some involvement of the nasal septum.

In view of the fact that the various leper expeditions which were sent out to the provinces have had gangosa in mind, and that no cases resembling this disease came under observation, it would seem to indicate that the disease is of rare occurrence in the Philippine Islands.

INSANITY.

Certain comparisons were made in the last annual report with reference to the prevalence of insanity in the Philippine Islands and other countries, and it was shown that in the United States there was one insane or feeble-minded person to every 304 of the population, while in the Philippine Islands only one person in every 1,667 was insane or defective. The percentage of recoveries under treatment was about the same as that of Great Britain.

The Bureau of Health census of the insane for the Philippine Islands shows that there were 2,029 males and 1,610 females, or a total of 3,639. Of the 1,972 male adults 1,375 are single, and of the 1,573 female adults, 967 are single. Four hundred and twenty male adults and 330 female adults are married, while 115 males are widowers and 209 females widows; 62 males and 67 females are not classified.

The new insanity department of the San Lazaro Hospitals mentioned in the last report as being under construction has been completed and is now in full operation. The building is constructed of reënforced concrete, which experience has shown to be as nearly earthquake-proof as it is possible for structures of strong material to be.

The insanity law recommended by the Bureau of Health has not yet been enacted. The present legal machinery is without definite status, and in the case of contests, the Government would be helpless except in cases where crimes have been actually committed.

The distribution of insane by provinces is noted in the statistical part of the report. Authority has been granted each province to commit a certain number of insane based upon the population of the province, to the San Lazaro Hospital, by paying the cost of transportation from their homes to the Hospital. The Bureau of Health has also been caring for the insane among the Philippine Scouts, (native troops of the Islands) the actual expense of the same being borne by the military Government.

INTESTINAL PARASITES—HOOKWORM DISEASE.

Practical work and experience change many apparently well-grounded theories. In casting about for the influences operative in the still high mortality in the Philippine Islands, two factors seem to stand preëminently to the front. One, the infant mortality, and the other, the extensive prevalence of intestinal parasites. After some consideration, infant mortality was dismissed from special study as this is a subject which is much the same all over the world, and has been given great study and attention by persons working in communities where ample funds and trained help were available, without having made great progress; so that it was decided to take up the question of intestinal parasites first. A fortunate incident occurred at this time which aided materially in the study of the problem. The death rate in Bilibid Prison under the administrative supervision of laymen had increased from year to year until the appalling figures of 238 per thousand were reached. The management of the sanitation of the prison was then transferred to the Bureau of Health. Ordinary sanitary measures, such as relieving overcrowding, improving the methods for the disposal of night soil, regulating the diet along scientific lines, improving the drainage, and other similar measures succeeded in bringing the mortality down to about 70 per thousand in a period of six months; but persistent efforts carried on for nearly six months more failed to lower it further. Patients were dying from illnesses which should not have killed them. At this juncture, a systematic examination of the stools of prisoners was begun. The same was undertaken by examining all the prisoners in a brigade, usually about 300 in number. In the first batch examined most astonishing revelations resulted. Eighty-four per cent of the prisoners were found to be afflicted with at least one intestinal parasite, 50 per cent had two or more, and 20 per cent had three or more. Fifty-two per cent of the total number examined had hookworms, which, in itself, would explain the lowered resistance to disease and the tendency among the prisoners to succumb to trifling complaints.

Specific treatment for eliminating the intestinal parasites was begun in a selected brigade, and after this was completed successfully, the work was actively continued until all the prisoners, numbering over 3,500, were examined, and the intestinal parasites removed. The percentage of parasites in the remaining group was about the same as that given for the first brigade. After the treatment was well under way, the death rate in the prison commenced to fall gradually, and several months after the intestinal parasites from the last prisoner under observation had been removed, the death rate dropped to 13 per thousand, and has remained low up to the present time, a period of over a year. These figures show in a most convincing manner the effet of the intestinal parasites upon the general health. They so reduce the resistance of the individual that he becomes a ready victim to almost any intercurrent disease which he may contract.

Records of over a thousand stool examinations made of persons at large in the Philippine Islands show that practically the same condition of affairs exists among the general population, so that as soon as the intestinal parasites of the inhabitants can be removed, and the environment made so that they will not readily become reinfected, it may be confidently predicted that the death rate in the Philippine Islands will be lowered to figures which will correspond very closely to those found in temperate climates.

It will thus be seen that the magnificent work which has been done in connection with intestinal parasites by Stiles, Loos, and others, has pointed the way toward a sanitary reform, which will, no doubt, stand in medical history as one of its greatest triumphs.

The study of the question of intestinal parasites has now reached a stage where definite results can be predicted with reasonable certainty. In order to put this matter upon a still more practical basis, arrangements have been completed to send a small commission to one of the nearby towns for the purpose of treating the residents there for this condition. When this has been done, it is hoped that the beneficial results will be so apparent that towns throughout the Islands will take up this question, which has such an important bearing on reducing the general mortality.

HOOKWORM DISEASE.

If there had been any question as to the influence of hookworm disease on the morbidity and mortality of the Philippine Islands, the revelations and results developed by the investigations carried on in Bilibid Prison under the auspices of this bureau would have decided the matter in favor of the necessity for the inauguration of an active campaign for the defense of people against this insiduous, relentless foe to human life, to the happiness of mankind, and to the prosperity of the masses in tropical countries. The wide prevalence of the disease and the helplessness and hopelessness with which it has been regarded in the past are better explanations of many features of tropical sociologic and anthropologic conditions than many others that have been advanced. The presence of a swarm of hookworms in the intestinal tract of a man exerts more direct and immediate influence on his physical condition than the inclination of the sun's rays or the amount of pigment in his skin.

Some time ago, the legislature of Porto Rico passed an act to create a permanent commission for the suppression of uncinariasis or tropical anemia in that country, and made an appropriation of $50,000, United States currency, to carry on the work. The commission was charged by the law to use all means in its power to prevent, combat, and suppress the disease known as tropical anemia or uncinariasis in the territory of its jurisdition, and for that purpose the establishment of a central station, substation, and dispensaries was provided for in the appropriation act. The results were gratifying to the medical men who were intrusted with the work, and saved the territory in human lives, as well as in industrial wealth, many times the sum appropriated.

This Bureau has formulated plans for a more extensive campaign than heretofore has been inaugurated by any country, against uncinariasis, and would had some of them in operation but for the appearance of cholera in the provinces. It is purposed to undertake this work with the regular force, and without any special appropriation for expenses. The problem will be attacked along both educational and practical lines; that is, every effort will be made to carry relief to the sufferers and at the same time to teach the principles of prophylaxis, so that the cured may remain well and the noninfected may know how to avoid the disease.

As much publicity as possible with the means at the disposal of the Bureau will be a feature of the campaign. Experience has taught that in the Philippines, and probably everywhere else, the best way to popularize a movement so foreign to the customs of the people as this innovation, is to prosecute it as if it were the only thing in the universe left undone. The success of the crusade will depend on a right start, but the people themselves, when they understand, may be relied upon to take care of the future in a matter of so far reaching importance to their own lives and happiness, and so inexpensive and simple in adaptation as the remedy against the cause of tropical uncinariasis. There is not a resident in the Islands who does not recognize the significance of the clinical aspect of uncinariasis, and when the actual cause of the disease is brought home to him by pictures, microscopic demonstrations, the display of exhibits, personal explanations, and convincing object lessons, he, too, will grasp the truths of prophylaxis and avail himself of the remedial measures presented.

The plan contemplates a sanitary awakening of the public along directions not heretofore pursued. Every available method of commanding the interest and coöperation of the people will be employed. Attractive exhibits of photographs illustrative of the disease and its causative factor will be a feature of the campaign, and the medical men in charge of the work will be able to demonstrate by microscope the various forms of ova of intestinal parasites, and to show the mature organisms. While the battle ground is to be the entire Philippine Islands, the first field of action will be those sections known to be the most profoundly infected.

Information blanks in the nature of card forms adapted from those used by the Porto Rican Commission will be employed for collecting information and assembling final statistics. The forms will include a warning card, a clinical record card, an inspection card, and an announcement card for the purpose of giving notice of the arrival of the inspector; a card of instruction, especially for the employers of labor, showing how the hookworm may be suppressed; and a treatment card.

The instruction card used in Porto Rico, under the heading of "Instruction to farm owners concerning the suppression of anemia in Porto Rico," bore the following information:

> Anemia is the disease from which the majority of our country folks suffer.
>
> It alone causes more deaths than all other diseases.
>
> Those peons and others that you are sheltering and that work for you are not strong because they are anemic.
>
> Should they become cured they would be better workmen.
>
> Send them to us that we may cure and teach them to prevent the disease.
>
> To prevent anemia remember that it comes from ground-itch (*mazamorra*); that ground itch (*mazamorra*) is only contracted where there has been earth soiling; that to avoid ground-itch it is well to use hose. So advise your people.
>
> But it is still more important that each house have its privy and that no one defecate on the surface of the ground.
>
> Prohibit your peons from defecating while at work on the plantation unless they cover each stool with a little earth that may be scraped up with a cutlass (*machete*).
>
> Thus the excrement is covered and the worms killed.

While it was not expected that every farm owner would comply with all these instructions or that it were possible to produce ideal conditions, the results were more satisfactory than had been anticipated.

If the hookworm caused directly more deaths in Porto Rico than any other disease, what an alarming array of charges could be brought against this pest if it were called upon to plead to an indictment from the whole world for all the deaths that it is indirectly responsible for through its devitalizing influence on its victims and its profound impress on their offspring. Children born of anemic parents can not possibly possess that degree of vital resistance necessary to tide them over the critical period of early infancy.

The life history of the hookworm when told in popular narrative style is more interesting than a novel, and could be made the subject of lectures, popular talks, and personal conversations without trespassing on the domain of delicacy. Sir Patrick Manson, the great English authority on tropical diseases, has so popularized the whole field of tropical medicine in the lecture courses which he has given in nearly every part of the world that it has been possible to adapt from his beautiful discourses a popular circular on the hookworm disease that can not fail to interest, instruct, and benefit the Filipino people. This Bureau has now in course of preparation a simple language text which is to be used as the basis of the didactic instructions and general information circulars under contemplation. This text, in treating of the hookworm, takes up the question in its relation to anemia. The rough outline of the circular in speaking of uncinariasis is to the effect that "hookworm disease is not a new disease that has been discovered, but it is an old one formerly called *anemia grave, anemia perniciosa,* and *falta de la sangre.*" This often grave condition is dependent on the presence in the intestinal tract of a hookworm. The worm is very insignificant in size, but in consequence of the local irritation and vitiating action on the blood due to its food necessities, and to a poisonous substance called toxin which it is believed to secrete, this innocent-appearing parasite brings about a condition of anemia in its host; that is, in the person in whom the worm exists. This anemia always produces a marked weakness which may lead to serious disease or death, and which, when affecting one or both parents, nearly always results in weakly, sickly children, who often die in early infancy or fall victims to this or some other disease during childhood. This is one of the reasons why so many Filipino babies and children die. The bodies that they have inherited from diseased, anemic parents, can not withstand the germs of tuberculosis, malarial fever, amœbic dysentery, and other diseases of this class, or even the unfavorable changes in the weather, so they die before their time.

In view of the fact that anemia is a very common disease in the Philippines and that it is robbing the parents of their children and the children of their parents, and producing sickness and distress of so serious a nature, it is of the greatest importance that the people should learn something about the cause for all this, which is nothing more than a little worm that finds its way into the intestinal tract and attaches itself by two little hooks to the mucous or inner coat of the intestines and thus gets its food at the expense of the host. These worms do not occur singly but in great numbers; the more numerous they are, the more grave will be the disease caused by them. They live in the small intestine and lay their eggs into the contents of the bowels, whence they escape with the feces. If the eggs, after they have thus passed out, are kept warm in a suitable medium such as damp earth, they hatch out and a very small and at first very active little worm or embryo, so tiny that it can be seen only by the aid of a magnifying glass, is set free. These little creatures rapidly acquire organs of digestion, and after casting their skins several times, and undergoing other changes to fit them for their subsequent life, they are ready to reënter another human being; the person who is so unfortunate as to be the one into whom the worms enter being called their host, because he supplies them with food and with a home in his intestinal tract.

It is known now precisely how reëntry is often, if not always, accomplished. It was formerly believed that the young parasite entered the human alimentary canal by being swallowed in dirty water or being transferred on earth-soiled hands or dishes to the mouth and thence to the stomach, but later investigations have shown that the most common method of infection is by a different route. The little worm penetrates the skin, generally that of the feet or legs, of persons passing through or working barefooted in or otherwise being brought into contract with earth in which the eggs of the hookworm have been deposited. The young worm enters the skin through some follicle, thence passes into a blood vessel which carries it to the heart, from which organ it passes by the pulmonary vein to the lungs, where it leaves the blood vessels and undergoes further changes for the purpose of enabling it to withstand the action of the gastric or stomach juice. The worm is on its way to the small intestine, its permanent abiding place, which it must reach before it can reproduce its kind. To get from the lungs to its final resting-place, it enters an air vesicle in the lung and from the air vesicle it finds its way into one of the little tubes that carry air into the lungs and so on, by the way of the windpipe, into which the smaller tube leads, thence upward until it can get into the lower part of the throat, find its way into the tube leading to the stomach, through which organ it passes and enters the small intestine, where it makes itself at home and begins in its peculiar way to raise a family by producing eggs destined to pass out of the bowel, hatch in damp warm earth, and begin the round again.

The most critical period in the life history of the little creature is the time when it is outside of the human body; millions of eggs are destroyed by unfavorable conditions and countless numbers of young worms lose their lives because they can not find an opportunity to continue their existence in human hosts. Should the temperature of the medium in which the young parasite is lying fall below a certain point, the necessary developmental changes are suspended or never commenced.

Filipinos are quite familiar with a form of itch called *mazamorra* or ground-itch This is an inflammation of the skin generally attacking the feet and legs, but at times other surfaces as well. The inflamed parts itch very severely and often become infected through scratching. Dr. Loos, a man who has studied this disease a great deal, has shown that the condition called ground-itch, or *mazamorra,* is produced by the entrance of the little hookworms through the skin; in other words, that it is but a manifestation of the presence of the hookworm disease. Sir Patrick Manson, an English physician who is a professor of tropical medicine in the great London University, in one of the several books he has written, tells a story of a planter living in the West Indies who told him how at one time he was seriously inconvenienced by *mazamorra* among his farm hands. He noticed that this trouble was followed by profound anemia and also that the skin disease and anemia occurred principally among the employees who worked in or passed through certain fields of his plantation. The weather in the West Indies is warm, as it is in the Philippines, and the working people go without shoes and stockings, from which fact the planter argued that in these particular fields there were certain germs that, coming in contact with the legs and feet of the laborers, produced first the skin disease, and later on, after they had entered another part of the body, the anemia; so this observing man, believing that the disease was a germ or bacterium, sought to find some remedy to circumvent or kill it. In thinking on this subject he remembered a certain practice that he had seen in Germany where he had frequently gone for his health. In that particular part of the German Empire to which he was accustomed to go, geese are raised in large numbers. The goose market is a long way from the goose farms, so that the geese when ready for sale have to be driven for many miles over the hard roads. To enable them to stand the journey, the farmers provided them with close-fitting antiseptic socks or sandals, made by filling a shallow trough with tar, and through the trough the geese were driven onto a piece of ground covered with a layer of fine sand. The tar stuck to their feet and the sand to the tar, and thus they were provided for their long journey. The planter, acting on the suggestion offered by this practice, had his laborers dip their feet in a bucket of tar and then walk across a layer of sand or sawdust. The result was that no more ground-itch was contracted because the skin was protected by the coating from the little worms. Other incidents could be related to show how easy it is to prevent the disease, but the matter is too plain to require further explanation.

The first step in determining the presence of the disease is to suspect it. The next is to consult the local board of health or the local president who will be able to give advice as to when the physician engaged in this special work may be seen.

The local physicians have for free distribution little cards with full directions that must be followed before, during, and after treatment. The cases will be examined by the physician, and he, at the same time, will determine the diagnosis and administer the treatment.

The opportunity is now presented for the people of the Philippine Islands to be cured of a very dangerous disease—one that prepares the way for many others. The coöperation and help of all is earnestly desired.

One of the main reasons why there is advocated elsewhere in this report the introduction of silkworm raising and the fertilization of the mulberry trees by human feces that have been exposed to certain destructive processes, is that only by making such feces of commercial value will there be enough interest taken in the question of the deposit of night soil as to insure official regulation.

The combating of the hookworm disease is certainly a large undertaking and to those who are not familiar with what, in the light of past experience, has been brought within the range of possibilities, the whole proposition may appear as a chimerical dream. But it can be done, and if nothing occurs to prevent the execution of the plans, it will be done.

The Philippine Islands Medical Association at its last annual meeting showed its interest in the great problem by passing the following resolutions:

> Whereas it appears that the treatment of the prisoners for intestinal worms has been an important factor in reducing the death rate at Bilibid Prison; and
>
> Whereas it would appear further that over three-fourths of the population of the Philippines is at the present time infected with animal parasites; and
>
> Whereas infection with these parasites can be controlled almost absolutely by properly disposing of the human excreta which contains ova of the parasites; and
>
> Whereas the proper disposal of human excreta will at the same time remove one of the most dangerous channels for the dissemination of other infectious diseases: Therefore, be it
>
> *Resolved,* That the Philippine Islands Medical Association shall petition the Government of the Philippine Islands, through the Honorable Dean C. Worcester, Secretary of the Interior, that a commission of five properly qualified members be appointed to decide upon the most practicable and effectual means for the proper disposal of human excreta that can be established in these Islands.
>
> *Be it further resolved,* That the Government of the Philippine Islands be petitioned to make such appropriation and provide such amounts for the establishment of a working system for the disposal of human excreta as from the report of this commission may appear practical and expedient.

It is not believed that the people, when they understand the matter, which they can not fail to do when the Bureau of Health has carried out its plans of sanitary mission appeals, will show any hostility to the movement, as the work will be carried on by the local officers so far as practicable.

Special effort will be made to avoid technical expressions in the circular as it is intended to use it as a basis of popular and public enlightenment. The part relating to treatment has not been given, as the details of this part of the plan have not as yet been worked out.

LEPROSY.

Work on the project which had for its object the segregation of every leper in the Philippine Islands at Culion was actually commenced during the month of May, 1906. Up to that time the relief extended to lepers was more in the nature of aiding the individual leper; the larger project of exterminating this disease from the Archipelago was never seriously undertaken. In view of the conflicting opinions as to whether segregation could accomplish this, and the question of financing so large a project, considerable delay was caused in starting this undertaking.

The experience of the past two years, while not yet sufficient to form definite conclusions, is strongly indicative of the fact that not only will the disease be exterminated, but that the project will prove to have been most advantageous from a financial point of view. The foregoing is from the purely utilitarian standpoint; but viewing it from the larger, and, of course, first to be considered, humanitarian standpoint, the care of all of these unfortunates will redound to the credit of America as an act that will receive favorable comment throughout the civilized world.

At the time the work was commenced, it is estimated that there were at least 3,500 lepers in the Islands; at the end of the first year there were 2,826; at the end of the present fiscal year the number was 2,486. The reduction in the number during the first year resulted largely from the fact that persons who lived in the Islands of Samar, Leyte, Masbate, Romblon, and Negros who were classified as lepers were found to be suffering from other diseases. Not the least of the benefits derived by the collection of lepers in the provinces is the fact that many persons who had for years been outcasts from society on account of being afflicted with diseases that resembled leprosy were treated for the maladies from which they actually suffered and have again been restored to their rightful social status.

During the past year instead of finding less lepers than the reports showed, in a number of provinces many more were found. For instance, in the Province of Albay there were 57 reported. After the examination of all the suspects was completed, 317 were found positive. In Camarines instead of 33 there were 42. In Sorsogon instead of 87 there were 121.

These increases fully offset the erroneous diagnoses of the previous year, so that we must look for other reasons to account for the decreased number this year over that of the preceding. In view of the fact that 953 lepers were removed to Culion last year and 1,554 this year, it is certain that at least this number of foci of infection was obliterated, and the opportunity of contracting leprosy was just that much reduced.

From the foregoing it is estimated that at least three hundred less persons contracted the disease. The advantage accruing therefrom will at once be apparent. Not only have over three hundred unfortunates been saved from this, the most, hopeless and loathsome of all human diseases, but just that many less charges have been thrown upon the body politic, and three hundred nonproducers have been held in the producing class.

The actual work of collecting the lepers and caring for them after they are collected still presents obstacles, many of which at times seem unsurmountable. Regardless of what the opinion of people may be in the abstract, when it comes to persons who will do actual work of transporting them to a seaport, providing their subsistence, aiding them aboard the steamers, making the necessary medical examination, attending to their needs, experience has again and again demonstrated that they are most difficult to find and only persons with superior courage can be induced to continue at the work. One of the greatest aids has been the enactment of Act No. 1711, entitled "An Act providing for the apprehension, detention, segregation, and treatment of lepers in the Philippine Islands."

The practice of making a careful microscopical examination of each case has been faithfully carried out, and no doubt is largely responsible for the confidence which is displayed in the diagnoses made by the medical officers of this Bureau.

The attitude of the people of the Islands as a whole toward segregation has been most gratifying. There is probably no place where family ties are closer than in the Philippine Islands. In spite of the fact that it has frequently been necessary to separate husband from wife, mother from child, brother from sister, friend from friend, they resign themselves to their fate and in addition frequently aid the representatives of the law whose duty it is to carry out the segregation, when it is explained that such action is necessary for the good of the many. With the exception of a few isolated instances, the collection of the lepers has been carried on without any marked opposition or disorder. The only serious accident is that which occurred at Malitbog, Leyte, at which place two lepers became involved in a quarrel, as a result of which one was fatally stabbed. However, quarrels of this kind are not confined to lepers, and scarcely can be said to be connected with the question of segregation.

A frequent experience perhaps worthy of mention is the practice of many municipalites presenting their insane, blind, cripples, and other incurables who have become public charges, for transfer to Culion. These of course can not be taken care of upon a leper island, but when they are not taken away much surprise is often shown.

The Provinces of Mindoro, Masbate, Romblon, Capiz, Iloilo, Antique, Oriental and Occidental Negros, Samar, and Leyte, have already been gone over two or more times, and with the exception of a few isolated cases, may be said to be free of lepers. The Provinces of Cebu, Bohol, Ambos Camarines, Albay, Batangas, Tayabas, Sorsogon, Benguet, Lepanto-Bontoc, and Ilocos Sur have been gone over once, but are not yet regarded as being free of lepers, and they will necessarily have to be searched over one or more times again.

The present Legislature has made ample appropriation for continuing the work during the coming fiscal year along the lines mapped out by the Philippine Commission during the year just closed.

At the colony proper much work was accomplished, but it has not yet even commenced to assume the appearance it is hoped it will have when the permanent improvements have been installed. The constant idea has been to make the colony, at least temporarily, habitable in the shortest possible time for the total number of lepers in the Islands, so that the opportunities for contracting the disease may be reduced to the smallest limits, and the drain on the resources of the Islands decreased as soon as possible. This plan also has the advantage of keeping the Bureau informed as to approximately how many lepers will have to be cared for at Culion for many years to come, and thereby makes it possible to regulate the extent and character of the permanent improvements to be made.

The Bureau of Health has not only provided all of the medical care and attendance required, but has carried on the construction work as well. Even construction work in the Philippines under the direct charge of the technical Bureau of the Government created for that purpose is attended with many difficulties, such as lack of labor, skilled superintendence, difficulty of obtaining supplies, torrential rains, and many other obstacles; but it sinks into insignificance when compared with construction work on a leper island, that has a steamer call only about once a month, and where labor goes with fear and trembling, often deserting in a body, and where trained superintendence is scarcely obtainable. It is for this reason that particular credit is due to the medical and other officers connected with the Bureau of Health for the results which have been obtained. The construction work done at Culion will compare favorably in character and cost with that done elsewhere.

A reënforced-concrete warehouse has been completed and a 100-bed hospital of the same material is now in course of construction. The work on the hospital is being delayed by the difficulty in obtaining laborers on account of their fear and dread of the disease.

So far it has not been found practicable to have the lepers do work other than that entailed by their own domestic requirements. This course has been adopted in deference to their physical condition, and in respect to their innate disposition to take life easy, which after all is not a bad thing in lepers.

The mortality at the colony still remains high, but it is believed that it is materially lower than it would have been among these same people in their homes, as many of them were beggars and wholly dependent on public charity for their living. The great majority of cases were so far advanced when they were received into the colony as to render them beyond human aid; those who arrived in a reasonably fair condition have gained in weight and strength and are apparently happier, healthier, and better satisfied then they were in their native provinces. The work of the hospital staff has been exceedingly trying and disgusting owing to the prevalence of gangrenous ulcers among the new arrivals, the treatment of a single patient often requiring more time than a major surgical operation. As soon as the hospital now in process of construction is completed, the question of treatment will be greatly simplified by the increased facilities and more favorable conditions.

X-RAY TREATMENT OF LEPROSY.

During the fiscal year treatment of lepers in the San Lazaro Hospital with the X-ray has been continued. The results in 30 selected cases are as follows: Apparently cured, 1; markedly improved, 5; improved, 7; died, 2; the foregoing 30 cases include the 29 persons who were mentioned as being under treatment in the last annual report. One of these died of chronic amœbic dysentery, and the other from puerperal infection, both of which are causes that are apparently in no way connected or capable of being ascribed to the X-ray treatment.

Last year the cases under treatment were reported as follows: Markedly improved, 8; considerably improved, 13; no change, 7; died, 1 (lobar pneumonia). One of the markedly improved cases is now apparently cured. Microscopical specimens taken from regions which heretofore have invariably shown *lepræ* bacilli were found negative during the month of June. The following is a history of the case:

Personal history.—Name, Leon Liuanag; male; age 20; not married; nationality, Filipino; birth place, Bocaue, Bulacan; laborer; uses tobacco moderately, uses no alcohol; good habits; present residence, No. 28, Calle Alejandro VI, Sampaloc, Manila; entered the San Lazaro Hospital August 12, 1906.

Family history.—Parents alive; father in provinces, suspected of having leprosy; mother well; has one brother, alive and healthy; no sisters; relatives, negative.

Past history.—No previous diseases of importance; venereal history, negative.

Present history.—Two years ago he noticed a swelling on the upper lobe of right ear. This swelling was reddish in color, not itchy nor painful. He treated it with family remedies, but it continued to grow worse, spreading all over the ear. Says that three months after the first lesion appeared on his right ear, noticed also a macular lesion on his lower lip, reddish in color, not anesthetic, not itchy nor painful, which continued to grow slowly. He made no attempt to treat this second lesion. Says that he had no other symptons since the appearance of the disease.

PHYSICAL EXAMINATION.

1. *General.*—Development and nourishment, fair; reflexes, negative; glands, negative; genitals, normal.

2. *Head.*—Scalp, normal; eyes, negative; above left eyebrow there is a small round tubercle, reddish in color, but not anesthetic, not itchy nor painful. Nose: The tip shows a reddening and it is shiny in appearance, and the alæ nasi are infiltrated. Mouth: The border of the lower lip shows from the middle portion to the right angle, a macular lesion, red in color, not anesthetic, itchy nor painful, but with slight infiltration, and measures 2 centimeters long and 6 millimeters wide. Ears: Left normal, and about 4 centimeters in length; the right ear is hypertrophied and measures 7.5 centimeters in length, and 4 centimeters in width; reddish-brown in color, and its lobules show some breaking down of the tissues with some suppuration; rest of the face, normal; neck, normal.

3. *Chest.*—Skin, normal, except that the back shows several round white spots which are somewhat anesthetic; development and expansion, good; heart, normal; lungs, normal.

4. *Abdomen.*—Skin, normal; organs, normal.

5. *Extremities.*—All are normal.

MICROSCOPICAL EXAMINATION.

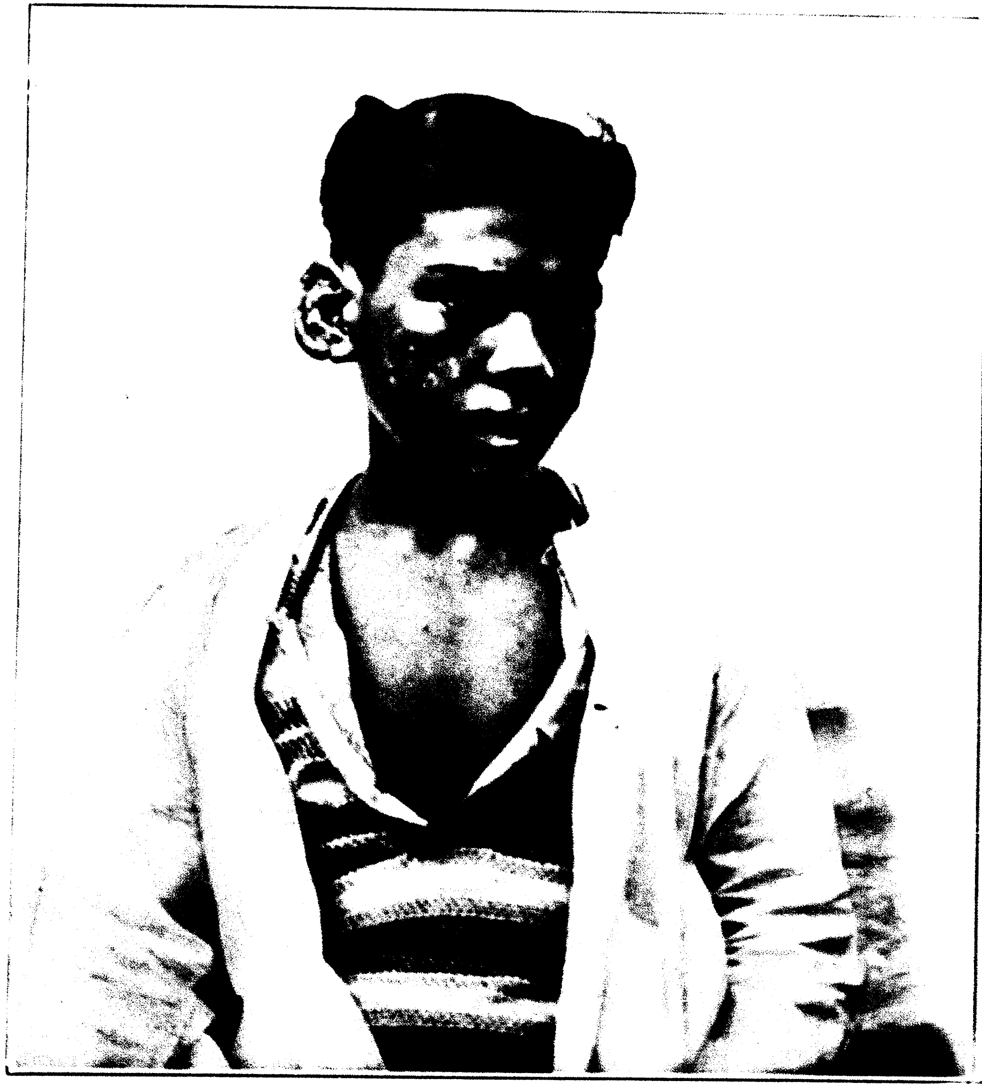
Examination of blood from the affected parts shows the *Bacillus lepræ*.

Present condition.—Ears are now normal in size; infiltrations about nose and lip have disappeared; no anesthetic areas; white spots on back remain; is apparently healthy and normal; condition of patient before and after treatment is well shown by photographs on succeeding pages.

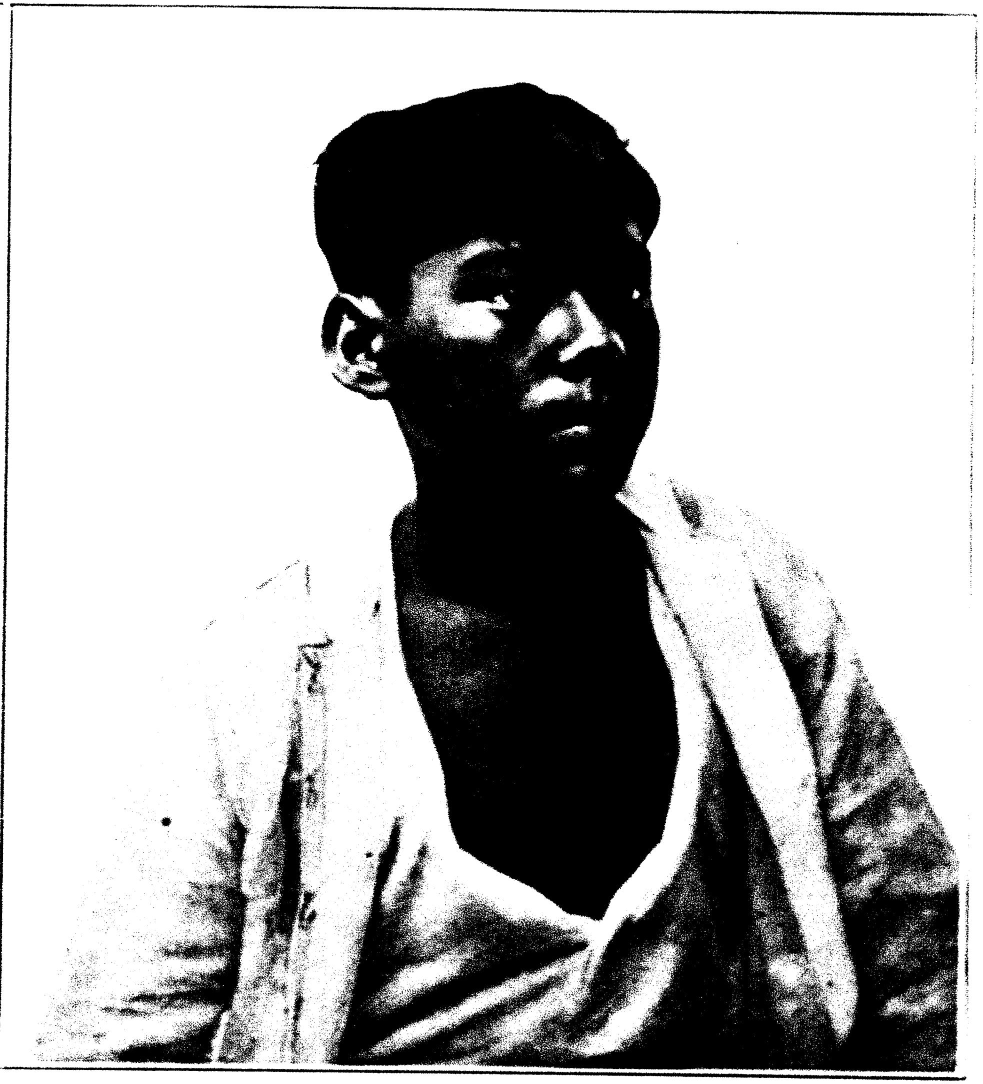
From the foregoing it will noted that a period of one year and six months elapsed from the time the treatment was begun until an apparent cure was effected.

The remaining seven formerly reported as very markedly improved showed still further improvement. Of the thirteen formerly reported as considerably improved, one left the institution and the remainder show no further improvement. The seven reported last year as unchanged by the treatment show slight improvement. Of the two new cases placed under treatment during the months of January and April, neither one has as yet shown any improvement. The disease, however, has not progressed.

The net result is that one person has been apparently cured; three others show practically no signs of the disease, but are positive microscopically; in seven others the tubercles and infiltrations have been much reduced in size and the remainder present about the same appearance as when they were first placed under treatment, which shows that the progress of the disease was arrested, which is a most important matter.



LEON LIUANAG, PHOTOGRAPHED SEPTEMBER 27, 1906.



LEON LIUANAG, PHOTOGRAPHED JANUARY 12, 1907.

Conclusion.—The foregoing results are far from satisfactory, yet they are believed to be far superior to those which have been obtained by any other form of treatment of which this office has any reliable record; at the same time, some hope of relief is held out to the unfortunate sufferers from this disease.

MALARIA.

Malaria continues to figure in the causes of death to a greater degree than it should. The number of deaths for the period covered by this report is 164 (including those reported as malaria cachexia) as against 173 for last year.

The true conception of the nature of the disease and the manner of contracting it is gaining ground, especially among the younger generation now attending the public schools. Older persons learn of the bad habits of mosquitoes through the school children, and more and more assume an unfriendly attitude against this pest with whom they have lived on terms of "live and let live" relationship all their days. The use of mosquito nets is becoming quite general. In a number of instances complaints have been received that they were not being furnished in public institutions. Owing to the continuous high temperature throughout the year, the practice of screening doors, windows, and other openings of houses has not been practicable because it shuts off the air currents which are absolutely essential in this climate in order to enjoy reasonable comfort; so that mosquito nets must be depended upon for the present, and later proper drainage introduced, in order that the breeding of mosquitoes may be impossible.

The success which was had in preventing this disease at the Iwahig penal colony on the Island of Palawan, has continued. It will perhaps be remembered that one of the most pernicious forms of malarial fever in the Philippines was present in that section, and the efforts made by the Spaniards to found a colony resulted in complete failure. The method first employed was the prophylactic use of large doses of quinine. Drainage work was at once started, and this has now been completed far enough as to cause almost the entire disappearance of mosquitoes. Cases of malarial fever that originate in the city of Manila are still very rare as is also the *Anopheles* mosquitoes.

The entomologist of the Bureau of Science has discovered the mosquito *Myzomyia ludlowii* Theobald, breeding in salt water at Olongapo and near Manila, and by experiment proved it to be capable of transmitting malaria. He has published his results in the Philippine Journal of Science, Section B, Volume II, page 513.

It is believed that this mosquito has been responsible for the large number of malaria cases occurring among the United States marines and sailors that were stationed near Olongapo.

MEASLES.

An extensive inquiry made among physicians who have been practicing in the Philippines for more than twenty years reveals the fact that measles have been extremely common among the Filipinos, and that they have not been as immune as was heretofore thought to have been the case. The disease among Filipinos, however, is extremely benign, rarely ever resulting in death, and seldom leaving any bad sequelæ.

An extensive outbreak of measles occurred among the pupils attending the American school and there was almost positive evidence that it was brought in by children who arrived by transport from the United States. On account of the fact that measles in the United States is a much more serious disease than in the Philippine Islands, it was deemed advisable to take precautions to prevent any new infection being introduced. For this reason the American school was closed and disinfected, as were also the houses from which infected cases came.

Measles are continually being introduced into the Philippine Islands by the troops; it is perhaps worthy of note to mention that scarcely one organization that has traveled as a regiment has arrived here in the past seven years from the United States without measles having made its appearance among the troops during the trip.

THE OPIUM HABIT AND THE PHILIPPINE LAWS REGULATING THE SAME.

On March 8, 1906, the Philippine Commission after carefully considering the report of a special opium committee, which, during the greater part of the years 1904 and 1905, was engaged in studying and collecting data on the subject at close range in those oriental countries in which the habit is prevalent, passed a law for the purpose of restricting the sale and suppressing the evil resulting from the sale and use of opium until March 1, 1908, after which time its importation or use for any but medicinal purposes was forbidden by Act of Congress.

This law defined the term "opium" so as to embrace every kind, class, and character of opium whether ground, prepared, or refuse, and all narcotic preparations thereof, or therefrom, and all morphine, or alkaloids of opium, and preparations in which opium enters as ingredient, together with all opium leaves, whether such leaves or wrappers are prepared for use or not; and provided that it should be unlawful to sell, transfer, give, or deliver opium in any of its forms to any person other than a duly licensed physician, wholesale dealer, or retail dealer in opium, or to a duly registered confirmed Chinese user of the drug, upon the presentation of his certificate. The reservation was made that opium in any of its forms might be sold, transferred, or delivered to scientific Bureaus of the Government, and to hospitals upon the permission of the Collector of Internal Revenue, and also that duly licensed physicians might prescribe and administer it as a medicine, and pharmacists and second-class pharmacists might sell, transfer, give, or deliver the drug as a medicinal preparation on the prescription of a duly licensed and practicing physician under such regulations as might be prescribed by the Collector of Internal Revenue, and approved by the head of the proper department.

The definition of opium was subsequently modified by the honorable the Governor-General of the Philippine Islands, upon the recommendation of the Collector of Internal Revenue, so as to exclude preparations containing less than two grains to the ounce of opium, in restricted quantities and subject to the presentation of satisfactory evidence that the same was to be used for medicinal purposes only. It is estimated that of the habitués registered in accordance with legal requirements, the greater part continued to use the drug, but during the operation of this first law the habit was almost entirely restricted to those who had already acquired the same. This office has no record of any new beginners.

For some time previous to the expiration of the time limit imposed by the Congress of the United States, certain unscrupulous persons, probably through an organized corps of instructors, began to teach systematically the use of cocaine to the opium habitués, and for a long time it appeared as if one bad habit might be supplanted by another of greater danger. The movement gained such headway that additional legislation became necessary to prevent the introduction among the people of the cocaine habit. The Philippine Legislature on October 10, 1907, repealed the first Opium Act (No. 1461), and replaced it by another (No. 1761) which included cocaine, and also provided that on and after March 1, 1908, it should be unlawful for any person to hold or to have in his possession, or under his control, or subject to his disposition, any opium, cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances. It was provided that Government Bureaus, or officers of the Government, and practicing physicians should be exempt under proper legal restrictions, from the operation of the law. Since March 1, last, the use of opium and cocaine in the Philippine Islands has been officially forbidden except when used for medical purposes under guarded legal restrictions. For instance, it is held to be illegal for anyone to import opium or cocaine into the Islands, this function being vested solely in the Government, which sells these drugs only to such persons as are clearly entitled to have them.

The possession of any opium pipe, hypodermic syringe, apparatus, instrument, or paraphernalia for the use of smoking opium, or hypodermic syringe for the use of cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances, or any other apparatus or instrument especially designed for using any of the said drugs or substances, in or on the human body, shall be deemed prima facie evidence that the person in possesion of such pipe, hypodermic syringe, apparatus, instrument, paraphernalia, or articles, has used some one of such prohibited drugs or substances, or the drug or substance for the use of which such apparatus, instrument, and paraphernalia are especially designed, without the prescription of a duly licensed and practicing physician, unless such prescription is produced by such person.

As would naturally be expected, the 1st day of March, 1908, was a "black" Sunday for opium habitués. When the truth and seriousness of the situation dawned on the unfortunate sufferers who had sinned away their two years of grace, the conditions were deplorable. The behavior of the victims in the face of the Government's determination to save them by legal force, would truly characterize them as fiends. The term "fiend" is used very liberally by the laity, but such stigmatization is not appropriate until a victim is deprived of the drug to which he has become a slave. In sheer desperation the sufferers sought hospital treatment which the Government had generously provided. The rush was so great and the task so severe that the San Juan de Dios Hospital, which had previously held the contract, asked to be released on the ground that it did not possess proper facilities for the accommodation and restraint of so large a number of frenzied patients. In order to meet the emergency, several wards of the new insane department of the San Lazaro Hospital were made ready for the reception of the opium patients, and the San Juan de Dios Hospital released. In the new quarters they fought, screamed, threatened, and sulked until they realized that the Government meant business, when they quietly submitted to treatment by the humane reduction method, administration of nutritious food and the stimulus of moral encouragement, and were cured. The Chinese consul-general of the Philippine Islands and the Chinese Chamber of Commerce rendered valuable aid in dealing with their people.

The Rev. Mr. Studley, missionary of the Protestant Episcopal Church of America, at great risk to his personal safety and absolute destruction of his personal comfort, took up his residence with these people and worked as a hospital attendant, and more credit than the Director of Health can give him in a report of this character is his due. His work was not confined to Manila, but he went to Cebu when the Bureau of Health established a hospital there, and labored incessantly for a number of weeks. The combined efforts of the provincial board, the district health officer, and the Rev. Mr. Studley, however, could not overcome the indifference and opposition of the persons affected in that province, whereupon the hospital was closed May 27, after running forty-two days.

The contract with the Mission Hospital at Iloilo was continued during the year on a very satisfactory basis. To this and to all Government hospitals treating the opium habit, transportation is provided the patients free of charge, so that the benefits of instructional treatment, restraint, and encouragement may be available for all. The selection of a hospital is determined on a basis of transportation facilities and traveling expenses.

Experience has demonstrated that the opium habit is not a particularly difficult matter to treat, especially among the smokers. Those who used the drug by mouth experienced more inconvenience, and those who were in the habit of using it hypodermically suffered considerably. The method employed by this Bureau is that known as the "reduction method." When the contract was held by the San Juan de Dios Hospital considerable trouble was experienced through the zealous efforts of friends, and the mercenary motives of others, surreptitiously to supply the patients with opium products. This trouble was also encountered to some extent after the patients were transferred to San Lazaro, and until it was completely removed the question of a cure was beyond the range of possibility. Just how many relapsed after being discharged from the hospital is, of course, not known; but it is noteworthy that a great many of the habitués expressed themselves as being extremely grateful that they had been cured, and that they would not again permit themselves to become victims. In Manila, no cases of relapse have come under observation, but in Cebu the persons treated did not take kindly to the efforts that were made to redeem them, and many are known to have relapsed promptly. During the past few months, the treatment of these cases at Manila has apparently yielded excellent results. This is largely due to the hearty coöperation which was extended by the friends of the victims. At Cebu this coöperation was not forthcoming; the victims themselves were opposed to being cured, and almost a complete failure has been the result. The users at Cebu are now being vigorously prosecuted and severe penalties imposed. Such cases, of course, come under compulsory treatment in the hospital of the prison, and it will be interesting to observe the outcome. The following table shows the total number treated, the result of the treatment, and the name and place of the hospital at which treatment was given:

Place.	Nationality.	Admitted during year.	Recovered.	Improved	Not improved.	Remaining at close of year.
San Lazaro	Filipinos	17	14	3		3
	Chinese	383	365	18		18
	Others	1	1			
	Total	401	380	21		21
San Juan de Dios	Chinese	223	63	[1]2		158
	Filipinos	36	34			2
	Others					
	Total	259	97	2		[2]160
Mission, Iloilo	Chinese	3	3	3		
	Filipinos					
	Others					
	Total	3	3	3		
Cebu	Chinese	27	27			
	Filipinos	37	37			
	Others	1	1			
	Total	65	[3]65			
	Grand total	725	542	26		181

[1] Escaped 1, discharged as improved 1.

[2] Transferred to San Lazaro Hospital for treatment.

[3] Relapsed after leaving hospital.

The Bureau of Health has recently imported shoots of the plant *Combretum sundaicum,* which has gained so great a reputation in the treatment of the opium habit in India, and in a short time will be in a position to give the remedy a thorough test. The importation of this plant was made not because the "reduction treatment" was unsatisfactory, but with the hope that it might prove less severe, and also for the purpose of studying its pathological and therapeutical effects. The reputation of the remedy rests almost entirely upon empiricism.

PARAGONIMUS WESTERMANII INFECTION.

In the report for last year attention was called to the fact that seventeen cases of *Paragonimus westermanii* had been found in Bilibid Prison. Eight of these were fatal, the diagnoses having been made at autopsy. The figures for the past year are 14 cases and no deaths. This year as well as last, in several cases it was ascertained that trematodes were not confined to the lungs, as they were found in the various organs of the body and particularly in the brain. It is practically certain many cases which were diagnosed as tuberculosis were really fluke infections.

PLAGUE.

The Philippine Islands have been entirely free of plague originating locally since April 20, 1906, but the Director of Health has maintained a strict vigilance, exercised chiefly through the United States Public Health and Marine-Hospital Service, against the disease.

On July 23, 1907, the steamship *Ferd Laeisz* arrived in Manila from Hongkong and other Chinese ports. At the examination made by the quarantine inspection a case suspicious of plague was found. This was transferred to the San Lazaro Hospital, where the diagnosis was confirmed bacteriologically. The vessel was remanded to the Mariveles quarantine station for treatment and detention. There was no further spread of the disease.

Up to the present time there has been no exception to the remarkable regularity of the time of the year in which plague develops in Hongkong, Amoy, and other Chinese ports. During the month of May the disease makes its appearance, the fastigium being reached during June or July, after which it gradually declines until the month of November is reached, when there is usually a complete disappearance of the disease. So far, no satisfactory explanation has been offered for this phenomenon.

On June 9, 1908, the following circular was issued for the guidance of quarantine officers throughout the Philippines:

TREASURY DEPARTMENT,
U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Manila, P. I., June 9, 1908.

[Circular letter.]

The MEDICAL OFFICER IN COMMAND,
United States Public Health and Marine-Hospital Service.

SIR: In view of the large number of plague cases reported at Hongkong, Canton, and other oriental ports in close communication with the Philippine Islands, the conclusions of the Indian Plague Commission, which has made a comprehensive study of this disease, and has issued the same in a complete volume, are of particular significance, and it is desired that the officers of this service stationed in the Philippines who deal with vessels arriving from plague infected ports, be guided by its conclusions, which are as follows:

"1. Pneumonic plague is highly contagious, but it is rare (less than 3 per cent of all cases) and plays a very small part in the spread of the disease.

"2. Bubonic plague. Man is entirely dependent upon the disease in the rat.

"3. The infection is conveyed from rat to rat, and from rat to man solely by the rat flea.

"4. A case of bubonic plague in man is not in itself infectious.

"5. A large majority of cases of plague occur simply in houses. When more than one case occurs in a house, the attacks are generally nearly simultaneous.

"6. Plague is generally conveyed from place to place by imported rat fleas which are carried by people on their person, or in baggage. The human agent not infrequently himself escapes infection.

"7. Insanitary conditions have no relation to the occurrence of plague, except in so far as they favor infection by rats.

"8. The nonepidemic season is bridged over by acute plague in the rat accompanied by a few cases in man."

VICTOR G. HEISER,
Chief Quarantine Officer of the Philippine Islands.

Vessels arriving from plague-infected ports are fumigated for the destruction of rats and vermin. There is no hypothesis other than that of constant watchfulness that will explain why the Philippine Islands should be free from plague when an active commercial intercourse is maintained with near-by infected ports.

The following editorial comment, extracted from an article published in the Boston Transcript, is cited as representative of the comments of the press of the United States on the plague situation in the Philippine Islands:

A PLAGUE LAND NO LONGER.

One of the notable successes of American administration in the Philippines is that won by the skillful and devoted physicians of the Public Health and Marine-Hospital Service, who have charge of the sanitation of the Archipelago. In a few years they have completely transformed the sinister reputation of Manila and the other Philippine cities, and have made considerable progress toward teaching the inhabitants of the remoter provinces how to live and to defy the pestilences which, descending from the Asiatic mainland, have periodically swept like devastating fire through the Filipino towns and villages.

The Spaniards were as notoriously unable to cope with disease in the Philippines as they were in Cuba. Up to the year of American occupation, Manila was one of the worst plague spots in the East, and the average rate of mortality among the natives and the foreign residents was entirely suppressed or inadequately stated, it was so appalling. When the first American soldiers sailed across the Pacific one of our Boston newspapers, violently opposed to the National Administration, distinguished itself by the jubilant prophecy, often and exultantly repeated, that they would all be dead before the year had ended, and that the American Government could never keep an army in the Philippines without resorting to forcible conscription!

How half-crazy, half-ludicrous this prediction now appears in the face of the report of Dr. Heiser, Director of Health, that the death rate among the Americans in Manila in the quarter ended March 31, 1907, was only 5.4 per thousand. Nor are our civilian and soldier countrymen the only beneficiaries of the vigilant and forceful American system of sanitation. The death rate for the entire population of Manila, Filipinos, Chinese, Europeans, all included, was only 28.48 per thousand, which is a remarkably low figure for the Orient. The record steadily improves with the increasing grip of the American sanitary authorities on this peculiarly difficult situation. Thus, there has not been one case of the plague in the Philippines since April 20, 1906.

SMALLPOX.

More cases of smallpox came under observation during the year covered by this report than during the preceding fiscal year, yet at no time did the disease become epidemic, which was in striking contrast to the conditions that have prevailed in the near-by countries. In some of the large cities of Japan, for instance, as many as a thousand cases per week occurred, while in Manila not more than a few cases per day were reported.

The disease was found mostly among recent arrivals from the provinces who had not been properly vaccinated. The reappearance of the disease in many towns of the provinces was apparently due to two causes; first, the undoubted lowered potency of the vaccine during certain periods of the year, and second, to the negligence of the municipal officials in not vaccinating the new-born children, and other unvaccinated individuals who had come into the province after the systematic vaccination of the same was completed. Experience has shown conclusively that the Islands are literally saturated with the infection of smallpox, and wherever there is an individual who is not protected by a previous attack, or by a successful vaccination, the disease soon seeks him out and he becomes one of its victims.

Another difficulty is that as the vaccinators continue their work they are ever going more and more into remote places where it is most difficult to supply them with vaccine in a potent state.

At Bilibid Prison the disease made its appearance a number of times. In view of the fact that every prisoner is vaccinated upon entering the prison, at first sight it would seem that smallpox in this institution should cause considerable doubt upon the efficacy of vaccination. But upon examining the afflicted individuals it was found that in nearly every instance the pock marks of previous attacks were revealed, thus showing that they were unusually susceptible individuals whom even a previous attack did not protect.

The principal feature of surprise in the recent smallpox outbreaks was its virulence. Ordinarily the mortality for this disease among Filipinos is about 5 per cent, never above 10 per cent, but in the outbreak of this year it ranged from 25 to 50 per cent. The disease was almost entirely confined to the nonvaccinated. Notwithstanding the repeated warnings given through the press and by circulars, many persons, especially the Americans, failed to be vaccinated. The probability of an outbreak among the unprotected towns at the close of the dry season was made the subject of special notices of warning, but it required the presence of an epidemic to arouse the people to action. As soon as the disease assumed noticeable proportions, the health stations were besieged by applicants for vaccination.

SPRUE.

Sprue is a most uncommon disease in the Philippine Islands. Only two cases have come under observation. So far as is known, it is not a communicable disease, nor does it occur in epidemic form, and is therefore of no great importance to the sanitarian of the Philippines.

HUMAN TRYPANOSOMIASIS (SLEEPING SICKNESS).

On a trip made during February for the purpose of collecting the lepers assembled at Albay from the Province of Albay, a blood specimen was taken from one of the persons who had been sent in as a leper suspect, and the slide being negative for *lepra* bacilli, the patient was released. This slide was taken to the laboratory in Manila, but unfortunately in the interim the identification marks became obliterated, and it could not be definitely ascertained from whom the specimen was taken. The specimen in question was made by Mr. F. H. Willyoung, of the Bureau of Science, and on being examined at the laboratory was found to contain trypanosomes, which were identified as being *Trypanosomii gambiensi*. A further effort was made to locate the person from whom this slide was taken, Mr. Willyoung making a special trip to the Province of Albay for this purpose. He succeeded in finding all of the individuals who had been previously examined as leper suspects with the exception of one person, a resident of the town of Camiling, who had died in the meantime, but he did not succeed in finding any further evidence of trypanosomes among the residents of that section. It is not known whether the person who died was the one from whom the trypanosomes were obtained or not.

During the closing days of the year another case which resembled sleeping sickness was reported in a person who is said to be a native of

Camiling, Albay. Arrangements are now being made for a member of the staff of the Bureau of Science to go to Albay for the purpose of investigating this matter.

TUBERCULOSIS.

With the exception of the tuberculosis hospital for prisoners afflicted with this disease, there is not a hospital in the Philippines entirely devoted to the treatment of such cases, yet this country is not far behind in the possession of crusaders against the great white peril.

The city of Manila has stringent ordinances against expectorating on sidewalks and in public places, but they have not been rigidly enforced, because it was deemed expedient as a matter of public policy to approach the problem at first in an educational way and give people an opportunity to familiarize themselves with the sanitary requirements.

The statistical tables will show the number who have succumbed to the disease in Manila during the fiscal year. The total is slightly less than it was last year. The Manila statistics are fairly suggestive of the ratio throughout the provinces.

The 1,167 deaths from tuberculosis in Manila represents 13 per cent of the total number of deaths for the city, or a death rate of 5.04 per thousand of the population. No reliable figures have been received from the provinces, but as stated before the conditions may be judged from the Manila statistics.

Tuberculosis has long been regarded by the public as a necessarily fatal disease, and it is very difficult to convince those afflicted with it that it often yields to the simplest hygienic measures; the people want a sign before they will believe. Formerly it was the practice to recommend a change of climate, but experience has amply demonstrated that the treatment is more dependent on proper nutrition than on meteorological conditions. Thousands of patients who have died in despair because they could not avail themselves of the benefits of climatic change might have been cured at their own homes. The requisites everywhere in the treatment of tuberculosis are: open air, abundance of nourishing food, and close medical supervision.

Sanitaria results with this treatment have often been as successful in New England as in Colorado and California. It is not the purpose of these comments to underrate the value of favorable climatic conditions in the treatment of this or any other disease, but the benefits are oftentimes more than offset by the inconveniences of travel, loneliness and homesickness, and the necessary status of patients among strangers.

There is no specific medical treatment of tuberculosis. It is purely a question of combating the germs by the natural powers of bodily resistance, encouraged and stimulated by those agencies which favorably affect metabolism. Proper hygiene and diet, the attention to the little things peculiar to each individual case, together with appropriate medication for special conditions as they arise, can be best supervised in a sanitarium; hence such treatment has been the most successful.

No disease makes such a drain on the resources of families, for its long insiduous course prevents its unfortunate victims from earning their living, thus oftentimes enforcing a condition of debt and actual want. In such cases the Government should take up the burden, and the time is not far distant when an appeal must be made for funds to erect Government sanitaria.

The insurance companies of Germany during the last two years have spent $1,000,000 for the erection and maintenance of sanitaria in which to treat tubercular policy holders. If these companies find it worth while to prolong the lives of their policy holders, is it not worth while for the State to throw out the life line to its suffering citizens?

The actual loss in the wage-earning capacity of an affected individual can be easily computed, as may also the expenses incurred, but the potential loss to the community at large can not be estimated. The aggregate is stupendous. If the great misery, humiliation, suffering, and despair of stricken victims, of the relatives and friends and those dependent upon them, be ignored altogether, and the question considered from its financial aspect alone, it would be a matter of wise public policy to relieve, in part, at least, this drain on the productive capacity of the country, which is measured in millions every year.

A large percentage of all cases of incipient tuberculosis is curable, hence a Government sanitarium should be limited to patients in the early stages of the disease. Every case in the advanced stage would exclude a case that could be cured. It will be at once seen that if patients are taken in to die, the institution would soon be looked upon as a place of final resort, and the educational factor in its purpose entirely lost sight of by the public.

One of the principal objects of a sanitarium is to educate the people. The influence exerted by those that are cured is the greatest power in the educational crusade against this disease. In the United States, it has been found that the average duration of treatment is about six months. An institution with a capacity of one hundred patients—that is, two hundred a year—ought to send back to the people at least 160 (80 per cent) missionaries to preach hope and health to their countrymen. The people must realize the nature of this disease; that it is communicable and preventable; that taken in time and properly treated it is curable. One enthusiastic patient returned cured is worth more among these people than all the circulars and literature that could be produced on the subject. The Bureau of Health has records of cures in the provinces as well as in the local hospitals, of cases which appeared hopeless.

Some of the provincial cases were treated along the lines suggested in the bulletin on this disease issued by this Bureau, without the aid of a physician.

When the finances of the country will permit, compulsory hospitalization for consumptives in the advanced stages may be advisable, but the educational side of the question is of the most importance at this time.

The Government will appoint delegates to the coming International Congress of Tuberculosis to be held at Washington City.

In connection with this subject, it may be interesting to quote the preliminary report of the Philippine Committee representing the International Association for the Study and Prevention of Tuberculosis:

MANILA, P. I., *March 21, 1908.*

Dr. JOHN S. FULTON, Secretary-General,
National Association for the Study and Prevention of Tuberculosis,
810 Colorado Building, Washington, D. C.

MY DEAR DOCTOR FULTON: Your letters of September 13, 1907, were duly received, appointing Doctors Heiser, Strong, and Marshall the committee representing the National Association for the Study and Prevention of Tuberculosis for the Philippine Islands.

The committee has been working as much as opportunity allowed to prepare the way for the fight against tuberculosis in the Philippine Islands. As yet there is very little reliable data as to the extent to which tuberculosis prevails here, and there is no centralized effort to combat the disease. So far it has not been feasible to institute an organized campaign against tuberculosis on account of the magnitude of the work at present in progress directed to the extermination of smallpox, leprosy, cholera, beriberi, and other infectious diseases from these Islands, and the establishment of a suitable condition of public and household sanitation. We are, however, gathering information in regard to tuberculosis and are gradually arousing the medical profession to a realization of the importance of this subject and to the need of concerted action.

The death certificates of the Bureau of Health indicate that tuberculosis is a common disease among the native Filipinos, and that it is frequently encountered in the State prison. The careful routine autopsies recently inaugurated at the Philippine Medical School already throw considerable light upon the subject. In the first one hundred autopsies, tuberculosis was the cause of death in thirty-four cases; was present as a subacute or latent lesion in eleven cases, and was present as healed focus in nine cases. The only morbid conditions which revealed a like frequency were amœbic ulceration, which was found fifty-four times, and the intestinal parasites which were present in practically every case; while next in importance came pneumonia, which was the cause of twenty-three deaths. The figures speak for themselves and comment is unnecessary.

The only institution for tuberculosis patients in the Philippines is a hospital conducted by the Bureau of Health for the isolation of tuberculous prisoners from the State prison, and yet the need of suitable institutions is indicated by the statistics given above, while the habits of the natives, their generally poor state of nutrition, and the crowded condition of their homes all furnish conditions favorable to the spread of the disease.

As we have remarked, no systematic campaign has yet been definitely launched against tuberculosis in the Philippines, but a general survey of the field inclines your committee to believe that this disease is closely associated with other preventable diseases of the Islands, and that the campaign must begin with a concerted effort on the part of the medical societies and with education of the ignorant Filipino tao or peasant in the elementary laws of hygiene. We may be able to attack this problem in Manila through the agency of the Bureau of Health dispensaries, which are scattered through the native sections and which would make excellent centers for a house to house campaign.

There is little hope of our being able to institute a campaign in the regions outside of Manila until we have proved successful locally, but we hope eventually to meet this condition through the Philippine Medical School which is engaged in instructing native men and women who have received a high school education, and who, when they graduate in medicine, will spread through the outlying districts of the Philippines and diffuse their knowledge in regions now entirely devoid of medical attention.

Recent investigations have shown that intestinal parasites are even more frequent among the Filipinos than among the Porto Ricans. At the last annual meeting of the Philippine Islands Medical Association a resolution was adopted requesting the Governor-General to appoint a committee for the purpose of attacking the problem of the disposal of feces with a view to diminishing the presence of intestinal parasites.

At the same meeting, upon motion of your committee, the president was instructed to appoint a committee representing the Philippine Islands Medical Association to coöperate with your committee in the struggle against tuberculosis. We hope that these two tuberculosis committees will be able to coöperate with the Governor-General's committee and to use the information acquired in launching an anti-tuberculosis campaign.

Very truly yours,

Victor G. Heiser,
Richard P. Strong,
Harry T. Marshall.

TYPHOID FEVER.

The mortality statistics for the city of Manila show that there have been 84 deaths from typhoid fever as against 66 deaths during the previous fiscal year. Very few of the deaths were verified by autopsy, and it is believed that some of the diagnoses are open to doubt; however, the number of cases seem to increase from year to year. The cause for this was fully discussed in last year's report.

Statistics from the provinces are not available, but it is not thought that the disease has been very prevalent. The Manila cases have, for the greater part, been imported. The real immunity from this disease in the past has probably been due to the comparatively small number of flies and to their facilities for obtaining food in Filipino homes without any necessity of visiting the remote portions of the premise. The completion of the new water system will lessen the danger, and probably enable the health authorities to keep the disease from ever becoming epidemic.

YAWS.

This disease was encountered during the year at a number of different places throughout the Archipelago. It was observed among some lepers that were being transferred from the Province of Albay to Culion. Shortly after they arrived the disease was discovered among other lepers who were at Culion before the Albay lepers came, thus showing almost conclusively that the disease is communicable. At the San Lazaro Hospital (leper ward) some further spread also took place, apparently from the cases which were reported last year. These cases received no treatment except a local application of an oinment of boric acid, while some patients applying to the outpatient dispensary of the Bureau of Health were treated with mercury and the iodides. No difference could be observed in the time of convalescence of the treated and untreated cases.

No deaths from this disease have been reported.

AN UNDETERMINED DISEASE.

On January 4 a case was encountered in the city of Manila which occasioned this Bureau considerable anxiety. In the district of Santa Cruz a Filipino aged 18, an employee in an umbrella and hat factory, took ill suddenly on the morning of January 3. He complained of severe pains in the chest, but no vomiting or diarrhœa were present. No reliable data could be obtained, but from the best information that could be had, it appeared that he had no fever. On the morning of January 4 he died, at which time the case first came to the notice of this Bureau. The body was sent to the San Lazaro Morgue as a cholera suspect, but upon autopsy, findings common to a severe form of septicæmic poisoning were encountered, with extensive hemorrahages throughout the lungs and upon the serous surfaces of the heart. Slight enlargement of the spleen and considerable free fluid in the abdominal cavity were found. The intestines showed slight signs of enteritis, but no special pathological changes were noted. The mesenteric glands were considerably enlarged and exuded serum freely upon section. A similar condition likewise obtained in the lymphatic glands of the chest. Smear preparations were made from the glands of the chest and stained in the usual way for plague bacilli, and typical bipolar organisms were found. A number of experienced microscopists examined the specimens, and all were unanimously of the opinion that the organisms closely resembled those of plague. Cultures were likewise made of the intestinal contents. The pathological findings so closely resembled those of plague that the Bureau of Health deemed it necessary at once to inaugurate all the modern methods for combating this disease. The house in which the case occurred was thoroughly disinfected and later treated with petroleum. All textiles were soaked in bichloride while rat bane and rat traps were placed about the premises, and a general campaign of rat catching was commenced throughout the entire city for the purpose of ascertaining whether the rats of Manila were plague infected. A careful investigation was then made of this case from a clinical and epidemiological standpoint, with the result that indicated as closely as an investigation of this kind can that the case was likely not plague. In the meantime the laboratory investigation was continued, and within a period of forty-eight hours cultures which had been obtained from the glands grew with typical spore formation, showing almost conslusively that they were not plague bacilli, particularly because the latter do not produce spores, and more time is required for cultures to grow. The diagnosis was still further clarified by almost pure cultures of cholera vibrio being obtained from the specimens taken from the intestines. Innoculations into guinea pigs also failed to produce plague.

CEMETERIES.

The amount of work thrown upon this office during the year in connection with the enforcement of Act No. 1458, which has for its object the regulation of the cemeteries throughout the Islands, has been very heavy. It is quite probable that an equal amount of time devoted to some other branch of sanitary work would have yielded much better results.

The experience of the past two years has clearly demonstrated that in the majority of the cemeteries it has been customary to inter human remains in the same place which has been utilized for a similar purpose a few months or years previously. No records seem to have been kept as to the exact location of bodies, and it has not been an infrequent experience that the mourners who accompanied the dead to the burial ground had to witness the uncovering of remains that were buried at an earlier date.

The records of the total number of interments in some cemeteries showed that at least five or more bodies had been buried in one grave. Steps have been taken to remedy this condition by having the rules which are given below enacted into municipal ordinances throughout the Islands, and by closing the cemeteries which were overburied. This latter action has given rise to considerable friction in some provinces; but with the exception of a few isolated instances, the owners of cemeteries are now complying with the law.

During the year definite action was taken upon 548 cemeteries. Two hundred and ten were ordered closed, and 198 sites for new cemeteries were approved. Eight new sites were disapproved for cemetery purposes, on account of not conforming to the law; 128 cemeteries already in existence, were authorized for continued use; 3 were enlarged and 1 was reopened. Since the law became operative, 909 cemeteries have been acted upon, and it is estimated that there are still 621 cemeteries that have not been reached. From the foregoing it will be apparent that over one-half of the cemeteries have been acted upon.

In view of the fact that a routine procedure has now been definitely established, it is hoped that this work will be nearly finished before the end of the next fiscal year.

CEMETERY RULES AND REGULATIONS.

All cemeteries now existing or hereafter established must conform to the requirements of Act of the Philippine Commission No. 1458, and be governed by the following regulations:

GENERAL.

1. Cemeteries shall be traversed by a main road 2 meters wide, from the main entrance to the opposite side, and, beginning at the main entrance, at a distance of every 30 meters, this main road shall be intersected at right angles by paths at least 1 meter in width traversing the cemetery from one side to the other.

2. Cemetery sites should be inclosed by a suitable fence sufficiently high and strong to prevent the entrance of animals and provided with a gate or door with a lock.

3. Trees may be planted only in such manner as will not obstruct the area set aside for graves.

4. The cemetery shall be open for interments every day, between the hours of 6 o'clock a. m. and 6 o'clock p. m. Between the hours of 6 p. m. and 6 a. m. the cemetery door or gate shall be closed and locked, and no one shall be permitted to enter cemeteries between these hours except upon authority of the president and municipal council, first obtained.

GRAVES.

5. In all general cemeteries graves shall be dug side by side, in a row, and shall be numbered consecutively.

6. Graves shall not be less than 1½ meters deep.

7. The grave for an adult shall occupy not less than 3 square meters of ground, which space shall be utilized as follows:

The grave itself shall be 2 meters long and 85 centimeters in width, and on all sides of same there shall be an unoccupied space 20 centimeters wide. Thus, the entire space allotted for an adult shall not be less than 2.40 meters long and 1.25 meters wide, and the entire area of same shall not be less than 3 square meters.

There shall be an open unoccupied space, 40 centimeters wide between any two adjoining graves.

8. There shall be placed at the head of each grave a marker of wood or other suitable material, which shall bear the number of the grave. These markers shall be of uniform size and shape, and the numbers shall be burned or cut thereon. This marker shall not be constructed as to prohibit the placing of any tombstones.

DISINTERMENTS.

9. The disinterments of bodies from cemeteries, and the transfer of bodies from place to place, is strictly prohibited except in accordance with the provisions made therefor in Act No. 1458.

CEMETERY REGISTER.

10. Hereafter Municipal Form No. 23, section 3, "The Register of Deaths," shall be called "The Death and Cemetery Register." The municipal secretary shall enter under the column of "Remarks" of the death and cemetery register, the name of the cemetery in which the body has been buried, and the number of the grave which it occupies. Tenientes of barrios, or persons other than the municipal secretary, who are authorized to issue burial permits, shall, when making reports to the municipal secretary of the burial permits issued, also

state therein the cemetery in which each body is interred and the number of the grave it occupies, in order that the municipal secretary may make a record of the same in the register of deaths and cemeteries.

11. The municipal secretary shall prepare and keep a plan of all cemeteries of the municipality, upon which shall be indicated a number of spaces equal to the number of graves which may, under the provisions of this ordinance, be dug in each cemetery, and the spaces representing graves, indicated thereon, shall be numbered consecutively, beginning with No. 1. When any grave is occupied by a body, the corresponding space on the plan shall be marked with the word "occupied."

CARETAKER.

12. A caretaker shall be employed whose duty it shall be to dig graves, to remove all weeds and rubbish from the cemetery; to keep the roads, paths and decorative trees and plants in good condition constantly; to keep the fence and gate in good repair; to keep grave markers in proper position, and to perform any other labor which may be required to keep the cemetery site and fence in good condition at all times. It shall also be the duty of the caretaker to require the owners of monuments or other property in the cemetery to keep the same in good condition.

13. The caretaker shall see that each grave is dug at least 1½ meters deep; that graves are dug side by side in a row; that each grave is of the proper length and width and that the free space of 40 centimeters between adjoining graves is strictly observed.

14. The caretaker shall be ready to open the gate of the cemetery between the hours of 6 a. m. and 6 p. m. on any day, for the purpose of permiting the interment of bodies. He shall be the custodian of the key of the cemetery. Between the hours of 6 p. m. and 6 a. m. the cemetery gate shall be closed and locked, and no one permitted to enter except by the authority provided for in rule numbered 5.

15. The caretaker shall not permit the interment of any body in the cemetery unless accompanied by a proper burial permit which shall have been issued within forty-eight hours from the time presented to him, and he shall permit no disinterments to be made unless a proper permit therefor is presented.

FEES.

16. The fee for each burial permit shall be........................(Act No. 1530 provides that fees for burial permits shall not exceed 50 centavos.)

17. The charge for each grave shall be ....

18. Any person violating the provisions of these regulations, or any part thereof, shall, upon conviction, be punished by a fine not to exceed ₱200, or by imprisonment for six months, or both, for each offense, in the discretion of the court.

It would also be desirable to construct in each cemetery a small, neat, house or shed, to protect mourners from the sun or rain.

A sketch has been prepared to accompany the above regulations, showing the general plan to be followed in establishing a cemetery.

SANITARY CONDITIONS IN MORO PROVINCE.

The Moro Province consists of all that portion of Mindanao, including the many small islands adjacent thereto, not embraced within the boundaries of the Provinces of Surigao and Misamis, which, being reguarly organized provinces, are governed under the general provincial code.

Some idea of the size of the Moro Province may be obtained from the consideration of the fact that its 450,000 inhabitants give a density of population of only 15 to the square mile, as compared with 67 to the square mile for the entire Philippine Islands. There are 50,000 Moro children, 28,000 pagan children and 12,000 Christian children of school age, that is, between 8 and 15, in the province.

The Moros and pagans, while at variance with the Filipino people in matters of religion, law and customs, support them assiduously in their opposition to race suicide by rendering loyal obedience to the first part of the biblical injunction, but, unfortunately, here as everywhere else in the Philippines, thousands of children are born but to die. The majority, perhaps, never live to see the first anniversary of their birth. The doctrine of right living needs to be taught and practiced in the midst of those who through ignorance are responsible for this alarming prevalence of race homicide. Nature has done her part to an unusual degree. The country is blessed with a salubrious climate and a bountiful food supply.

The superintendent of schools for the Moro Province in his annual report for last year in discussing the purpose and scope of the local public schools, came very near to suggesting what will be the ultimate solution of the problem when he said:

> It is essential for the Filipino child to know how to live, not in the highly organized society of America or Europe, but here in his own native land, surrounded by more primitive conditions. And if this is the true purpose of education, it would be foolish for us to impose upon the great mass of the Filipino peoples an education calculated to fit them for life, under conditions which do not obtain in their native land, and which, even under the most favorable circumstances, can not obtain there for generations to come. It is, indeed, a legitimate purpose of education to stimulate healthy, natural growth to the utmost. We are therefore justified in teaching in the schools concepts a step in advance of existing conditions, that our pupils may be fitted to lead in the national development. But no step in the orderly development of national life can be slighted or omitted. The foundation must be well and firmly laid if we wish to raise an enduring superstructure.
>
> We have then to consider what is the next step to be taken in the orderly development of the people of this province. Few will gainsay the assertion that no considerable progress in culture or in any phase of national life can take place without the practical basis of material prosperity. Material prosperity in the Moro Province means agricultural and industrial expansion. The immediate purpose of education in our primary schools should be, then, to lay the solid foundations of prosperity by stimulating our agricultural and industrial development. That is, every primary school of our system, though including the ordinary subjects in its curriculum, should lay emphasis upon industrial or agricultural training. This does not mean, however, that opportunity should not be given to all who so desire to educate themselves for professional careers. It merely determines the kind of instruction which will be most useful to the vast majority of pupils whose opportunities for education are limited to the primary school.

The superintendent was not writing of sanitation, but he could have gone further and shown that the knowledge of how to live correctly means infinitely more than knowing how to make a living; it signifies, from the standpoint of the sanitarian, rules for perfect culture of mind and body. It is true of the people of the Moro Province, as it is true of the people of the whole world, that if they had the knowledge and desire, they could literally choose between health and diseases, not always individually, for the sins of ancestors are visited upon their descendants, but as a race; man directs his own destiny and can select between good and evil in health matters as well as in other things; hence it is but natural that the sanitarian should cherish the belief so beautifully expressed by the late Dr. Parkes that as time unfolds the scheme of the world, it is not too much to hope that the choice will be for good.

The Moro Province is divided into five districts, known as Zamboanga district, which includes the subdistrict of Dapitan, Sulu district, Lanao district, Cotabato district, and Davao district, each having its own capital and being subdivided into municipalities and tribal wards. The provincial capital is at Zamboanga, the capital city of the province of the same name, and the chief commercial, political and social center of Mindanao. This municipality is now governed by a Filipino president, a Filipino secretary, and American vice-president, and a council composed of five Filipinos, one European, and one Chinaman. The Chinese business interests of Zamboanga are larger than all other interests combined, the representatives of that race being merchants, brokers, planters, and landowners. The Chinese of Zamboanga are proverbially generous in their support of every public measure, improvement, or amusement, that is for the general good. They recently subscribed liberally to a fund to pay off the debt of the rectory of the local Episcopal Church, and they as cheerfully support the local health ordinances, and in every way display a patience, persistence, and conservatism which must inevitably result in permanent success and reflect credit on their race.

The general provincial government is vested in a governor, attorney, secretary, treasurer, superintendent of schools, and an engineer who constitute the legislative council.

THE PROVINCIAL BOARD OF HEALTH.

The Act of the Comission, authorizing the organization of the Moro Province, went into effect July 15, 1903, but it was not until March 29, 1905, that the legislative council passed Act No. 110, providing for the establishment of a provincial board of health with authority to organize district and municipal boards of health.

The provincial board of health consists of the governor as president, the superintendent of schools and the provincial engineer. The chief clerk in the office of the provincial secretary is designated by law as the secretary of the board, and the attorney for the Moro Province as its legal adviser, thus very closely identifying the provincial board of health with the legislative council.

The board as originally organized contained two physicians, the governor, Maj. Gen. Leonard Wood, and the superintendent of schools, Dr. N. M. Saleeby. The board as now organized is without a medical member; however, this anomalous and undesirable state of affairs is somewhat relieved by a provision of law requiring that the provincial board of health shall exercise its powers under the direct supervision of the Bureau of Health for the Philippine Islands. The powers of the board are varied and include the general supervision and control over the health and sanitary conditions of the Moro Province, including the health of domestic animals and the control of the district and municipal boards of health; it is required by law that it shall cause to be prosecuted all violations of sanitary laws and enforce the regulations of the Bureau of Health for the Philippine Islands throughout the Moro Province. It has the power to abate nuisances endangering the public health; to remove the cause of any special disease or mortality; to make and enforce such interior quarantine regulations as it may deem necessary in any part of the province, and to make and enforce quarantine regulations (subject to the approval of the Chief Quarantine Officer for the Philippine Islands) at ports of entry or other ports at which the quarantine service may not have been established. It is also charged with the duty of making and enforcing regulations for the maintenance, in a sanitary condition, of the prisons and other public institutions of the province or of any municipality within the province, and to cause every provincial and district jail or other public institution within its jurisdiction to be visited at least once a year by a member of the provincial board of health, for the purpose of investigating the sanitary condition thereof and making recommendations for the improvement of the same. It must also provide for the medical attendance of prisoners confined in provincial, district and municipal jails, or other public institutions, and, in its discretion, on indigents. It is duty bound to lend its assistance to medico-legal cases when requested by proper authority.

Besides its general powers, it is also vested by law with contingent emergency powers to the extent that when in its opinion the Moro Province, or any portion thereof, is threatened with an epidemic of infectious, contagious, or communicable diseases, the provincial governor may in his discretion, by proclamation, declare the province, or any part thereof, to be threatened with an epidemic and vest the provincial board of health with emergency powers to enact such emergency health ordinances as it may deem necessary to prevent the occurrence or spread of the threatened epidemic: such ordinances to have the force and effect and to be enforced in the same manner as laws enacted by the legislative council. It is provided that all emergency health ordinances and regulations shall become null and void when the governor, by executive proclamation, shall declare that the danger of an epidemic has passed unless he shall order otherwise.

DISTRICT BOARDS OF HEALTH.

In addition to the provincial board of health, the law declares that there shall be in each district of Moro Province a district board of health, which shall consist of the district governor as president, the district secretary and where provided for by the legislative council, a third member, who shall be a duly qualified physician. In cases where the legislative council has not provided for this specified third member, the district treasurer is required to act in that capacity.

The district board of health is the direct agent of the provincial board of health even to the extent that it is required to *hold such meetings, perform such duties and exercise such powers as the provincial board of health may require.*

MUNICIPAL BOARDS OF HEALTH.

Whenever in its opinion it may be advisable, the provincial board of health may establish in any municipality of the Moro Province a municipal board of health which shall consist of the municipal president as president, the municipal secretary as secretary, and a third member to be appointed by the *provincial board of health,* who shall, when practible, be a duly qualified physician or an undergraduate of medicine (*cirujano ministrante*). If a person of such qualifications is not available, a male school teacher of the municipality may be designated.

Municipal boards of health are also agents of the *provincial board of health,* but act under the supervision of the district boards of health, and like district boards of health, they must hold such meetings, perform such duties and exercise such powers (not in excess of the powers conferred by the Philippine Commission) with reference to the health and sanitary conditions of their respective municipalities and barrios, as from time to time may be prescribed by the *provincial board of health.*

From the scheme of organization, it will be seen that the responsibility for the health service of the Moro Province lies almost entirely with the provincial board of health, to which has been given a monopoly of power, as well as a multiplicity of duties. The peculiar conditions in this province render it advisable that the directing authority, in an innovation so momentous, so easily misconstrued and so alien to the ideas and customs of a semicivilized people, should be possessed of both legislative and executive powers, such as the provincial board of health is endowed with by virtue of its close identity with the legislative council of Moro Province.

Experience has demonstrated that it is much easier to say than to do in matters of public sanitation. With all this legal machinery and the effective scheme of organization, it has been impracticable to do much work of a permanent nature outside of Zamboanga, the capital city. In this district, alone, from July 1, 1905, to August 27, 1906, ₱5,675.99 were expended in salaries, and ₱3,639.30 for contingent expenses, which, with a similar item of ₱58.33 expended for Cotabato district, makes a total of ₱9,373.62 appropriated for the maintenance of the provincial sanitary service for that year. While the work has not been prosecuted so vigorously since the loss of the medical member of the board, yet in the municipality of Zamboanga during the calendar year ended December 31, 1907, there were made 1,929 vaccinations by the local board of health, and many public improvements inaugurated especially in the matter of the water and food supply for the municipality. These improvements are mainly due to the interest of the post surgeon who is also president of the municipal board of health, and to the efficient municipal sanitary inspector, a sergeant in the Hospital Corps of the Army.

Mention should be made also of the prompt and efficient manner in which the cholera situation when imminent or present has been handled by the medical officers of the Army throughout the Moro Province.

The interests of the public health have suffered somewhat from the wise determination of the legislative council to enforce a pay-as-you-go policy.

In the last report of Major-General Leonard Wood as governor of Moro Province, in speaking of the condition of the public health, it is stated:

> The lack of a provincial hospital is keenly felt. Thus far the military hospitals, with considerable inconvenience to themselves, have taken care of a large number of civilian sick and wounded, accidents, etc. It is hoped that funds will be available in the immediate future to commence the construction of a Provincial Hospital at Zamboanga.
>
> Vaccinators have been at work during the greater portion of the present year, and a very large number of people have been vaccinated. There have been no serious epidemics of diseases. The diseases found further north, such as amœbic dysentery and cholera, are seldom met with in this province. A few cases of smallpox have appeared from time to time among the hill tribes, but have not developed into an epidemic. The public health as a rule has been very good. The effects of this climate upon white men does not appear to be injurious. Both civilians and soldiers who take a fair amount of exercise and live a considerable portion of their time in the open air are healthy. The troops, especially, present a rugged and healthy appearance, although the large amount of field service has produce here, as elsewhere, a certain increase in the sick report. There is no reason to believe that this country can not be inhabited by white people without injurious results to their health. It will,

probably, be necessary, as everywhere else in hot countries, for white people to obtain a change of climate for a few months at an interval of four to six years, especially after middle life. Benguet, Luzon, and the neighboring country presents all the climatic advantages of the temperate zone, as do some of the high mountain areas in Mindanao. The Mindanao highlands are as yet unopened, except about Lake Lanao, but Benguet is easily reached, and the pine forests and fine bracing air are all that can be desired. The Lanao country is hardly high enough to secure an entire change.

Health of animals.—Since the people have come to understand the object of the isolation and destruction of animals for surra and glanders, and the methods proposed by the government for their preservation, there has been little or no opposition to the execution of the laws looking to the quarantining and destruction of animals suffering from surra and other infectious diseases.

General Tasker H. Bliss, the successor of General Wood, in supplementary report for a fractional part of the same year, said:

> The provincial government has pushed forward vaccination as rapidly as practicable and its results are manifest in the disappearance of smallpox. Great care has been taken to prevent the introduction of cholera from infected ports in the East.
>
> Hospitals and dispensaries are on the list of projects proposed for consideration as soon as the funds are available. In the meantime the thanks of the province are due to the army for its assistance in this respect. Indigents, and other sick and injured are treated in the military hospitals. The indigents are paid for by the province at a uniform rate. The Army surgeons serve as health officers at a small remuneration which the province will increase whenever it is able. Meanwhile, these surgeons render every assistance with the utmost willingness. The present arrangement gives us the equivalent of ten- or twelve-bed hospitals at the rate of about ₱250 each per month.
>
> The use of these hospitals by the natives has had a wonderful effect in increasing a friendly feeling toward the government.

It may be said that outside of the municipality of Zamboanga, and even there to a large extent, public sanitation in Moro Province is dependent on the Army and Constabulary. Wherever there is an Army post there is a health officer. At Davao the Philippines Constabulary has established a hospital which is well conducted under the supervision of an officer of its medical corps. Constabulary hospitals exist in other points and are operated satisfactorily. There are Army surgeons who act as health officers at Zamboanga, Jolo, Iligan, Malabang, Parang, Cotabato and Camp Keithley, while Cagayan, Dansalan, Makar Bajanga, Coraga, Mati and Cateel are without any semblance of health organization; Dapitan, Siassi and, as stated before, Davao, are under the Constabulary.

Taking everything into consideration a good start in public sanitation has been made in the Moro Province. Future success depends upon following up the advantages already won and extending the service, gradually at first, that is, more educationally than aggressively, more by the public schools than by public force.

LEGISLATION.

Besides the appropriation Acts, the following laws which either directly or indirectly concern the interest of the Bureau of Healt, were passed during the year.

Act No. 1666, passed July 2, 1907, appropriated one hundred thousand pesos for the Congressional relief fund, to be loaned under certain conditions to the provinces, and municipalities of the Philippine Islands, for the purpose of constructing artesian wells, markets, slaughterhouses, and other public works of a permanent character.

Act No. 1670, enacted July 8, 1907, authorized the board of trustees or directors of any asylum or institution in which poor children are cared for and maintained at public expense to place, with the consent of the Director of Health, any orphan or child so maintained whose parents are unknown, or, being known, are unwilling to support such child, in charge of any suitable person who may desire to have such child, and shall furnish satisfactory evidence of his ability to maintain, care for and educate such child.

The intrusting of any child to a person in the manner prescribed by law does not affect the legal status of such child or prejudice the right of any person entitled to its legal custody or guardianship.

It is provided that if the Director of Health, who is required to visit such children personally or by agent every three months, finds that any child which has been taken from any asylum or institution is not being properly maintained, cared for, and educated, he is required to place the child again in the asylum or institution from which it was taken.

Act No. 1677 enacted August 16, 1907, entitled "An Act to provide anatomical material for the advancement of medical science," provides that the body of any deceased person which is to be buried at public expense and which is unclaimed by relatives or friends for a period of forty-eight hours after death, shall be subject to the disposition of the Bureau of Health, and by order of the Director of Health and subject to such regulations as he may prescribe, and the Secretary of the Interior approve, may be devoted to the purpose of medical science and the advancement and promotion of medical knowledge and information.

The making use of the body of any deceased person for scientific investigation except for autopsy, or as provided by Act No. 1677, is prohibited by law.

Act No. 1688, enacted August 17, 1907, creates, under the heading of "Artesian wells" a permanent reimbursable appropriation to the credit of which was deposited the sum of ₱37,000. The provision was made that receipts which may accrue from Insular Bureaus, provincial and municipal governments, and other sources on account of services rendered and supplies provided in sinking artesian wells and equipping the same with the necessary pumping machinery, storage tanks, etc., necessary to provide potable water or fire protection, or both, should also be deposited to the credit of this permanent fund, to be expended under the supervision of the Director of Public Works.

Act No. 1694, enacted August 21, 1907, repealed section 14 of Act No. 309, which made all expenses incurred in the operation of vaccines and in carrying on public vaccinations in the Philippine Islands, except the salaries of the provincial and municipal boards of health, payable from the funds of the Insular Treasury. (Act 309, better known as the Compulsory Vaccination Law, was passed before the establishment of the Bureau of Science, and soon after the establishment of Civil Government. The changed conditions made it advisable to turn over the making of vaccine to the Bureau of Science and to make the expenses of local vaccinations chargeable to the municipalities to which they pertained. Insular vaccination parties are still maintained by the Bureau of Health.)

Act No. 1704, enacted August 31, 1907, incorporated the Philippine Medical School, and vested the powers of the corporation in the board of control of the Philippines Medical School, consisting of the Secretary of Public Instruction, the Secretary of the Interior, one other member of the Philippine Commission, designated by the Governor-General, and the dean of the faculty of the school.

Act No. 1711, better known as the Leper Act, enacted September 12, 1907, empowered the Director of Health or his authorized agents to cause to be apprehended and detained, isolated, segregated or confined, all leprous persons in the Philippine Islands, and makes it the duty of all Insular, provincial or municipal official employees having police powers to assist in such duties when requested by the Director of Health or his agents.

All protests and petitions are given careful attention and if the diagnosis is questioned, no person is forcibly removed to the leper colony or other place of segregation until the diagnosis has been confirmed by bacteriological methods.

The Leper Act also makes it unlawful for any person knowingly to detain or harbor on premises subject to his control or in any manner conceal or secrete or assist in concealing or secreting any person afflicted with leprosy with the intent that such person shall not be discovered, or to assist in the support of such lepers.

The Director of Health is authorized to cause to be established hospitals and detention camps at such places as may be necessary and to regulate the admission and outgoing of voluntary helpers as well as of the patients.

Act No. 1725, enacted September 23, 1907, amended Act No. 1458, known as the Cemetery Act, by authorizing the Director of Health to grant permits for the removal of all human remains in cases where arrangements had been made to do so before the passage of the said cemetery law which prohibits disinterments until one and one-half years have elapsed from the time of burial.

Act No. 1761, entitled "An Act gradually to restrict and regulate the sale and use of opium pending the ultimate prohibition of the importation of opium into the Philippine Islands in whatever form except for medicinal purposes as provided by the Act of Congress approved March third, nineteen hundred and five, and prohibiting any person from having the possession of opium, cocaine, or alpha or beta eucaine, in any of their several forms, or any derivative or preparation of any of such drugs or substances, except for medicinal purposes," was enacted October 10, 1907. (This Act has been mentioned in connection with the opium habit in another part of this report.)

Act No. 1771, passed October 11, 1907, so amended the Cemetery Act as to permit with the approval of the Director of Health or his authorized agent the expenditure for general municipal purposes of any cemetery funds remaining on hand on the first day of January of each year in excess of the amounts expended or obligations incurred to keep in order, improve, or embellish burial grounds or cemeteries of the respective municipalities.

Act No. 1797, enacted October 12, 1907, provided that when at the request of the Governor-General, to guard civil prisoners, aid the Director of Health of the Philippine Islands, in the enforcement of sanitary regulations, municipal health ordinances and health laws, or to aid other civil authorities in the maintenance of law and order and the enforcement of their authority, officers of the United States Army and officers of the Philippine Scouts in command of

troops shall be vested, while in the performance of their duties, with the powers of peace officers.

This Act repealed Act No. 1505 which was similar in its provisions but not so broad in scope as it was passed especially to cover conditions in Mariquina with reference to the protection of the water supply.

Act No. 1809, passed February 14, 1908, appropriating the sum of one hundred thousand pesos for the relief of sufferers from public calamities and authorizing a committee composed of not to exceed seven members of the Philippine Commission to be appointed by the president thereof and seven members of the Philippine Assembly to be appointed by the Speaker thereof, to consider and act upon all petitions for the relief of sufferers from general conflagrations, typhoons, floods, earthquakes, famine, pestilence, epidemics, and other disasters which amount to public calamities.

BAGUIO HOSPITAL DIVISION.

The Baguio Hospital division includes the management of the Baguio Hospital and the sanitary supervision of the Province of Benguet. A new thirty-bed hospital has been built, consisting of two general, two detention, and two private wards, an office, pharmacy, laboratory, operating, surgical dressing, and consulting rooms, two parlors, six private rooms, and the necessary number of bath and toilet rooms. The building is constructed of Benguet pine, with metal walls and ceilings, and supplied with hot and cold water throughout. Water is pumped from a spring into a tank with a capacity of 16,000 gallons, constructed on the high ground above the hospital. The water is conducted from the tank in pipes, and has pressure enough to furnish ample protection in case of fire.

During the hot season, Benguet is to the Philippine Islands what the great mountain resorts are to the people of the United States. The climate is very favorable for convalescent patients requiring surgical attention and women awaiting confinement derive great benefit from the pure, bracing air of this region. Now since the transportation difficulty has been solved by the opening of an automobile line connecting Baguio with the railroad, an increasing number of invalids and others will take advantage of this attractive resort.

There has again been an enormous increase in the number of persons who applied for relief. Last year the number of outdoor patients was 1,371; this year the number was 2,291, or an increase of almost 82 per cent. The great majority of the persons treated were Igorots, who came not only from Benguet, but from other provinces as well. In view of the fact that these people belong to the non-Christian tribes, the civilizing influence which the hospital exerts can scarcely be estimated, and the fact that it makes largely for peace and order can not be questioned.

The highest official temperature during the year occurred on November

22, 1907, when it reached 78.8° F. The lowest official temperature was reached on January 7, 1908, when it registered 48.1° F. The highest monthly average or mean temperature was 74.85° F. in June, 1908, while the lowest monthly average or mean temperature was 53.39° F. in January of the present year.

There were 163 days on which rain fell, the total rain fall amounting to 131.09 inches, which is rather higher than usual. The rainiest month was August, and the driest February. In the Appendix of this report will be found more complete data on the meteorological conditions of this favored region.

The year has been a particularly successful one in the administration of the affairs of the division. There were 4,400 individual vaccinations performed in the province, and a large number of sanitary fixtures installed in Baguio.

BILIBID SANITATION DIVISION.

The Bilibid sanitation division of the Bureau of Health is charged with the sanitation and hygienic care of all the inmates and employees of the Insular prisons, and the running of Hospital "A" for general cases, and Hospital "B" for tubercular cases.

There were a total of 114 deaths from all causes as compared to 180 for the previous year.

The prevailing diseases in the prison general hospital during the year were: Ankylostoma, 1,774 cases; amœbic dysentery, 617 cases; malaria, 297 cases; beriberi, 113 cases; acute dysentery, 62 cases; trachoma, 53 cases; conjunctivitis, 44 cases; pneumonia, 32 cases; Asiatic cholera, 8 cases.

So far as is known, none of the beriberi cases were contracted in the prison. A large proportion of them occurred in prisoners who were suffering from the disease at the time of their admittance, having contracted the same in many cases in the smaller provincial jails.

Of the 8 cases of cholera, 3 of the patients died and 5 recovered.

Statistical tables concerning the work of this division may be found in the Appendix to this report.

IWAHIG PENAL SETTLEMENT.

The sanitary improvement which began so auspiciously since the Bureau of Health took charge of this branch of the work has continued during the year, and the following table will show more conclusively the results which have been obtained than any written statement which could be prepared:

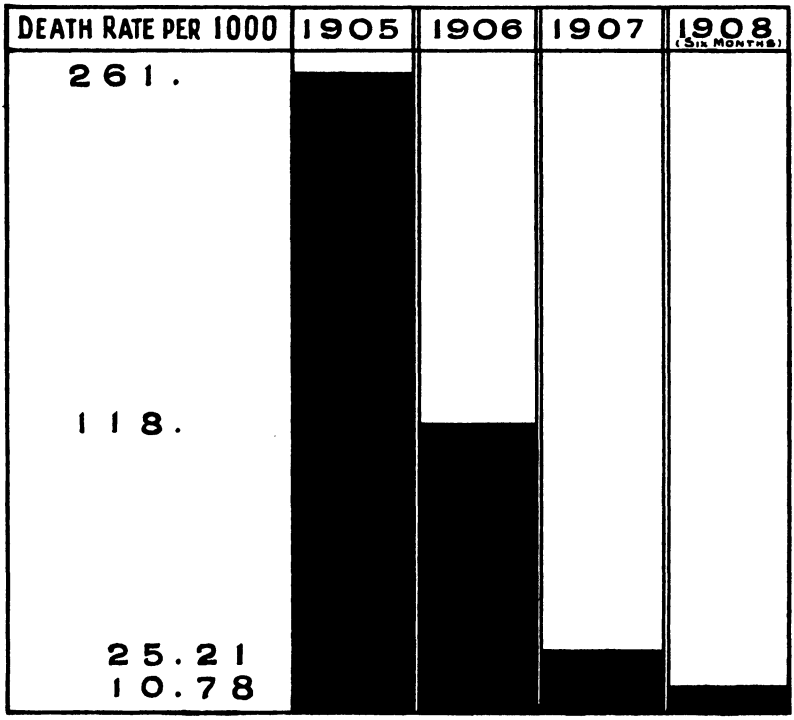


CHART SHOWING REDUCTION IN DEATH RATE AT THE IWAHIG PENAL SETTLEMENT, PALAWAN, SINCE THE BUREAU OF HEALTH TOOK CHARGE.

The drainage of the colony has now advanced sufficiently far so that the mosquitoes have disappeared almost entirely from that section of the settlement in which the houses are located. Notwithstanding this, however, the prophylactic adminstration of 5 grains of quinine daily to each inmate has been continued.

BOARD OF DENTAL EXAMINERS.

This board is organized under the provisions of Act No. 593 regulating the practice of dentistry in the Philippine Islands, and consists of three members, Dr. H. C. Strong, president; Dr. A. Vergel de Dios, member, and Dr. A. P. Preston, secretary-treasurer, who examine all applicants to practice dentistry, and exercise supervision over the interests of the profession throughout the Archipelago. During the fiscal year, there were two regular meetings and five adjourned meetings.

Eight applicants appeared before the board for examination, six of whom were graduates of reputable dental colleges, and two were *cirujano ministrantes* in dentistry from the Santo Tomás University. Of the American candidates, four were successful and two failed. Of the *cirujano ministrantes,* one was successful and one failed.

There has been no change in the membership of the board except that in September, 1907, Dr. L. C. O'Donnel was temporarily appointed to succeed Dr. A. P. Preston, who was on leave in the United States. Upon Dr. Preston's return in February, he was reappointed to his former position, Dr. O'Donnel having in the meantime resigned.

During the year there were three complaints filed with the board against persons for the alleged violation of the Dental Law. Abuses were corrected without resort to legal procedures.

There were collected from all sources ₱140, and expended for all purposes ₱376.

BOARD OF MEDICAL EXAMINERS.

The Board of Medical Examiners, composed of Dr. Eleanor J. Pond, president, Dr. Salvador del Rosario, secretary-treasurer, and Dr. Z. Laughlin, member, operating under Act No. 310, regulating the practice of medicine and surgery in the Philippine Islands, licensed during the year nineteen doctors of medicine, twenty-four licientiates of medicine, and eighteen *cirujano ministrantes.*

This board collected in fees ₱1,470, for the Government.

BOARD OF PHARMACEUTICAL EXAMINERS.

The Board of Pharmaceutical Examiners, in addition to conducting examinations and issuing certificates, is also charged in a supervisory capacity with the administration of Act No. 597 regulating the practice of pharmacy in the Philippine Islands.

The following extract from the report of the secretary-treasurer will show the principal operations of the board for the fiscal year:

> During the year two examinations were held; one upon July 2, 1907, at which were present twenty-three applicants, the other held January 2, 1908, at which thirty-nine applicants presented themselves: of this number twenty-eight, or 37½ per cent, attained the required average and were issued certificates as registered pharmacists.
>
> During the year sixty apprentice certificates and eight temporary pharmacists' certificates were issued, without examination.
>
> During the year from all sources there were collected ₱1,960. Of this amount, ₱760 are examination fees for the examination held July 1, 1908. Treasurer's receipts on hand, ₱1,960.
>
> The following are the salaries and fees paid to the members of this board for services during the period covered by this report:
>
> | | |
> |---|---|
> | Salary secretary-treasurer | ₱300 |
> | Fees for two members for 62 applicants, at ₱4 each | 576 |
> | Total | 876 |
>
> The board is composed of Hugo Salazar, president, Mariano Torres Pamintuan, member, and Ed. M. Chervenka, secretary-treasurer.

CIVIL HOSPITAL DIVISION.

The record of this hospital for the year shows that it has made a substantial contribution to the health of the community, and that its sphere of usefulness has not been diminished.

The following extract taken from the report of the chief of the Civil Hospital division and the statistics published in the Appendix will cover the scope of the work of this division.

Total number of patients admitted for treatment 1,487; of these there were 811 Americans and Europeans (Angle-Saxons), 622 Filipinos, and 54 Chinese, Japanese, and East Indians. There were 1,160 male patients, and 327 female patients, which may be further classified as 1,007 pay and 480 free patients; that is, emergency cases and civil employees whose salaries do not exceed ₱80 per month. Of the total there were 1,445 patients treated by the hospital staff, and 42 by outside physicians.

Total number of deaths, 35, of which number 3 were treated by outside physicians; of those treated by the hospital staff, 7 were in a dying condition when admitted to the hospital. The total percentage death rate for the twelve months was 2.25; of those treated by the hospital staff 2.21; deducting the 7 patients who were in a dying condition when admitted, the low death rate of 1.73 per cent is obtained. The death rate for those cases treated by physicians other than the hospital staff was 7.14 per cent.

The total number of days spent in the hospital by all patients was 16,446; the total number of days for those patients who were treated by the hospital staff alone was 15,571.

The following summary shows the work done by the attending physician and surgeon, with the assistance of the house surgeons:

Number of patients seen and prescribed for in office	15,245
Number of calls made in city	2,310
All patients in hospital seen twice daily	59,860
Total	77,415

The above does not include major or minor operations or confinement cases.

The total number of prescriptions filled at the hospital dispensary was 7,584, counting refills. The total number of dressings done in the operating and dressing rooms was about 14,600. There were about 1,500 minor operations performed upon patients not confined to the hospital.

CLERICAL DIVISION.

In addition to carrying on all the different lines of work which have heretofore been followed out, the enforcement of the Food and Drugs Act has thrown a large amount of additional work upon this Bureau, which has been felt principally in the clerical division.

The following extract from the report of the chief of the clerical division and cashier of the Bureau of Health upon the work of his office contains timely observations of certain conditions which not only obtain in this bureau but affect the entire service.

The constant movement of American personnel for reasons of promotion, dissatisfaction, unsuitability to the climate, has made the question of permanent office force a serious one. In most cases no sooner had an employee been trained enough to permit of his working independently than he was removed or removed himself, and the whole process began over. The question has been partly solved by the employment of Filipino clerks, but so far we have been unable to secure qualified Filipino stenographers in English although persistent efforts have been made upon the statement of other Bureaus that they have been successfully tried. Those who have been tried have failed from lack of trained concentration and sufficient knowledge of English. This latter qualification would appear to be most difficult to attain. As typists and copyists the Filipino excels and those employed in this office, as well as the Americans, have, without exception, been faithful in attendance and necessary overtime work.

The volume of work has remained undiminished; in fact, owing to the necessity of carrying on two offices, one in Manila and one in Baguio during the Benguet season, the work was increased somewhat. It is believed that the system devised for this purpose was effective and that with thorough understanding and full report of action taken at each end of the line, it is not necessary to remove records to Baguio. If, however, it should be decided that it was desirable to move an entire office to Baguio, the system would have to be considerably changed and the success of such a plan in an emergency bureau is doubted.

It is believed that the general health of employees was as good or better during the hot season, although the hours were not changed as heretofore. If the hours could be shortened and the employees prevailed upon to spend the extra time out of doors or at physical exercise of some sort, the change would be beneficial.

From observations of the work of other bureaus and offices it is believed yet that this bureau does more economical office work than any other Bureau of the Government, counting efficiency, promptness, amount and accuracy of work.

The financial report for the year will be found in the Appendix.

CULION LEPER COLONY DIVISION.

The following extract from the report of the chief of the Culion leper colony division is a brief record of the colony for the year:

On June 30, 1907, there were 731 lepers at the colony; on the same date this year there were 1,333. During the fiscal year ending the former date, there were four collections of lepers, aggregating 734 in number transferred to the colony; during the same period ending June 30, 1908, there were eight collections, aggregating 1,554, received here as follows: September 16, 221; November 25, 158; January 24, 211; February 3, 234; February 23, 257; March 2, 148; March 16, 175; and May 10, 150. Up to June 30, 1907, 1,100 lepers had been received at the colony; by the same date this year there had been received 2,654; up to the past year these were mostly Visayans; now there is a more even representation of different races, as during the past year Bicols, Tagalogs, and Ilocanos have been admitted. The one Spaniard mentioned in last year's report still remains the only white leper, and, with two Chinamen, constitute the only foreigners at the colony.

At the colony the following improvements have been accomplished this year:

Additional quarters for about 500 lepers.—These are built mainly of bamboo and nipa, and while temporary by reason of the nature of this material, still have been constructed with hardwood framework and double floor, and except in case of fire, should prove serviceable for at least four or five years. The bamboo for these and other purposes of repair, amounting to some 5,000 pieces, were cut on Culion Island about 25 miles distant by water, and considerable delay in the construction work was caused by inability to have same towed promptly to the colony.

Excavation for new hospital.—Probably the most pressing need of the colony, especially for the rapid segregation of all the lepers, is adequate hospital accommodations. As the number of lepers rapidly increased, the present hospital soon became overcrowded. The past year has assured the fulfillment of this urgent want and it is anticipated that before the present year has passed, a reënforced-concrete hospital of one hundred beds will be completed. This is planned to be constructed as a double hospital, a wing for each sex, with central administration, operating and sterilizing rooms; kitchen, separate baths, wash and toilet closets. The site chosen has necessitated considerable excavation of solid rock, requiring blasting and allowing but slow progress in the work at first; also the scarcity of labor and the difficulty of getting the same to work at the colony in close proximity to lepers has been no inconsiderable obstacle in the way of accomplishing this work more rapidly.

Women's hospital.—To relieve the congestion of the former hospital, another building was fitted up for the women, and the former one is now being used for the men only. This building was fitted up temporarily to meet the requirements until the new hospital is completed, and has water and sewer connections. It can accommodate some 50 patients and together both hospitals accommodate about one hundred.

Addition to kitchen.—As the colonists increased the cooking facilities became inadequate. These have been doubled by constructing another four-hole cooking furnace of reënforced concrete and roofed over with galvanized iron, replacing the nipa roof formerly covering the fire boxes and removing the danger from fire. This work was practically all done by the lepers themselves.

Buildings repaired and whitewashed or painted.

Four fire stations equipped with fire hose, ladders buckets, axes etc.

At Balala, the nonleper resident part of the colony, there has been accomplished:

Construction of house for resident physician.—This is built of strong materials, having seven rooms, including kitchen, bath and closet and supplied with modern sanitary arrangements.

Warehouse.—A reënforced-concrete warehouse 96 feet by 34 feet was constructed near the water's edge from where a stone wharf running out to deep water is being constructed. This constitutes one of the most serviceable permanent improvements and being practically fireproof, removes danger from fire and probability of loss of supplies.

New road.—A practically level road now extends from the employees' quarters at Balala to the colony; its extension to the new hospital site is contemplated.

Additional labor quarters.—This is of bamboo and nipa and of a temporary nature.

Walks and canals around employees' quarters.

Filling in sea front and constructing wharf and sea wall.

The mortality among the lepers continues high. However, considering the great number received in extremely bad condition, some dying en route, and some very soon after arrival, the fact that they may be all considered sick people and as such do not withstand well acute attacks of intercurrent diseases, the death rate does not seem exceptionally high, while it may appear so compared with that of healthy communities. The total number of deaths for the year was 958, occurring monthly as follows:

1907.		1908.	
July	23	January	87
August	38	February	96
September	42	March	116
October	51	April	86
November	90	May	114
December	97	June	118

If no more new cases were received, the death rate would rapidly fall as the number became less. Of those admitted during the first year there remain

290 and of the second year 274, and now among these a death is comparatively infrequent. Some of them seem stronger, better nourished and in better general health than when admitted, and may live a relative long time yet for lepers.

Smallpox was imported into the colony by new arrivals in February, and during March, April, and May there occurred 8, 4 and 4 cases, respectively, of a mild type, with no deaths. Every case occurred in persons not previously vaccinated or not recently successfully vaccinated, and when this was accomplished, no further cases developed after May 15.

The behavior of the colonists has been good. No serious offense has been committed during the year. There is a leper police force of fifteen men, unarmed, and under charge of an ex-constabulary inspector, who has proved a most valuable man in maintaining order and discipline. Considering the life of comparative idleness the lepers lead, that their passions and vices are not in any appreciable way curtailed by their disease and that some are pardoned prisoners for grave offenses, it is a source of satisfaction to report their conduct in this regard. Thirty-seven have at various times escaped or attempted to do so; 14 of these have returned or been returned, and of the remaining 23, a number have been located in Mindoro and Batangas, and will soon be returned. This appears to be but a natural consequence of their being isolated here and separated from home and family. It is but natural that some of the police, who are lepers themselves, should be in sympathy with their motives; and as they are the only guards to be reckoned with, it is not very difficult to accomplish their purpose. Again, formerly the colonists came from more distant localities and more difficulty of access by improvised craft; now they are arriving from Luzon, to which it is not at all impossible to make a crossing even in small craft, when the weather conditions are favorable.

There have been consumed from eight to ten beeves per week, and other rations consist of rice, mangoes, beans, fideos, fish, lard, onions, coffee, chocolate, sugar, milk, condiments, and vegetables as procurable. During this year they have been furnished with two carabaos, and with plows and other implements with which to do gardening, and given seeds, but very few are agriculturally inclined and have accomplished practically nothing in this regard.

The problem of the separation of the sexes, at one time contemplated, still remains as reported last year.

The health of some of the nonleper personnel has been but fairly good. Of the four Sisters first assigned here, two still remain, the other two having returned to Manila on account of ill health. There are now six Sisters since the increased number of lepers. The regular Chaplain is at present in Manila on leave of absence.

INSPECTION DIVISION.

The inspection division is under the supervision of the Assistant Director of Health, and includes the following sections: Medical inspections, food and drug inspections, water inspections, milk inspections, license inspections, sanitary inspections, disinfections, municipal boards of health, miscellaneous section.

During the year there were made 394,782 sanitary inspections exclusive of the special inspections; 6,482 disinfections, and 6,054 applications for license inspections. The special inspections coming under the general supervision of this division include milk, water, food and drugs, and scientific inspections as required by law for determining the cause of special diseases or mortality.

The miscellaneous section includes the inspection of churches, schools, cemeteries, morgues, markets, health stations, river boats, and public conveyances in general; also provincial sanitary inspections.

It is required by law that all jails, asylums, and other institutions in the Philippine Islands be inspected for the purpose of ascertaining the sanitary condition of the same. This work, for the most part, is done by the local officials, but as often as the exigiencies of the service will permit, the Director or Assistant Director of Health visits in person such institutions.

PROPERTY DIVISION.

In this division there were 423 requisitions received and filled during the year, as follows:

	Requisitions.
Provincial	175
Health station	75
Central Free Dispensary	14
Central office	23
San Lazaro Hospitals	16
Civil Hospital	20
Prison sanitation division	30
Board of Medical Examiners	1
St. Luke's Hospital	12
Bethany Free Dispensary	11
Philippine Medical School	4
Culion leper colony	16
Benguet Sanitarium	18
Iwahig penal colony	8

To fill these supplies, there were 112 requisitions prepared and forwarded to the Bureau of Supply, the rest of the supplies being filled from stock at this offiice.

These requisitions were divided as follows:

For the Bureau of Health (Manila)	44
For Culion Leper Colony	44
For Benguet Sanitarium	24

Of the above requisitions there were 244 shipments made, outside of delivery in the city and mail to the provinces, as follows: 161 shipments by steamships, and 83 by railway.

The total value of supplies, exclusive of subsistence, purchased during the year, amounted to ₱120,279.49, and the total amount expended was ₱105,681.65. The purchase of supplies was divided as follows:

Bureau of Supply	₱59,180.06
Bureau of Science	28,176.19
Bureau of Prisons	563.35
Bureau of Printing	11,500.17
Bureau of Public Works	37.40
Executive Bureau	20,822.32
Total purchases	120,279.49

On July 1, 1907, there were on hand 39 packages of simple remedies (selected remedies for provincial employees); during the past year there have been manufactured 107 packages, and in the same period there were expended 137 packages, leaving on hand June 30, 1908, 9 packages.

The total value of supplies sold to individuals and other bureaus amounted to ₱2,006.58.

VACCINATION SECTION.

The following figures cover the receipts and disposition of vaccine virus for the past year:

	Units.
Virus on hand July 1, 1907	3,498
Virus received during the year	2,774,950
Total virus to be accounted for	2,778,448
Quantity of virus used in Manila	91,562
Quantity of virus used in provinces	2,684,025
Quantity of virus on hand June 30	2,861
Total on hand and expended	2,778,448

The above amount of virus for the provinces was divided into 881 shipments.

As compared with the quantity of vaccine virus used last year, there have been 6,000 units more shipped to the provinces, and 15,888 units less distributed in the city of Manila.

The following figures show the receipt and disposition of the serum enumerated below:

	Bottles.
Antiseptic serum:	
On hand July 1, 1907	231
Expended during the year	2
On hand June 30, 1908	230
Plague prophylactic serum:	
On hand July 1, 1907	1,026
Expended during the year	2
On hand June 30, 1908	1,024
Sera (assorted):	
On hand July 1, 1907	110
Received during the year	147
Total to be accounted for	257
Expended during the year	136
On hand June 30, 1908	121

SANITARY ENGINEERING DIVISION.

The scope of the work of this division is very extensive, embracing in an advisory and supervisory capacity, all sanitary engineering and structural work throughout the islands.

From the regular annual report of the division, the following has been taken:

In addition to the sanitary work throughout the city of Manila, shown in tabulated form, the following projects have received attention by this division:

Bilibid Prison and Bilibid Hospital.—In July, 1907, provision was made for the disposal of surface drainage from the space contained within the new wall surrounding the addition to the prison grounds to be occupied by the new hospital.

In April, May, and June, 1908, work progressed on the new plans for a sewer system to connect with the new sanitary sewers now nearing completion, for the city of Manila.

In view of the many changes in the detailed location of the main and branch sewers, as well as changes in the location of many of the numerous closet systems themselves, entirely new plans have been drawn for this project.

The estimated cost (for material only) for these systems is as follows:

Bilibid Prison	₱26,418.67
Bilibid Hospital	5,558.47
Total	31,977.14

The above amounts are based on the assumption that water connections will be made with the city mains. If it is later decided to drill an artesian well the additional cost for the well and pump is estimated to be as follows:

Cost of well complete	₱5,000.00
Cost of pump	200.00
Total	5,200.00

The cost of tanks has not been included as it is understood that several tanks of large capacity are now on hand at Bilibid.

It is the understanding that the cost of the plumbing installations for the hospital is covered by the general appropriation for that purpose.

For the general installation an appropriation of ₱40,000 has been made by the Commission for the construction of iron beds for the prisoners and for the sewer installation, and it is understood that considerably more than half of the ₱40,000 appropriated will be available for the sewer system.

Pasig inspections.—In August a report on the sanitary condition of the town of Pasig was submitted, in connection with the monthly report. In addition a plan of a tight sanitary vault for the new high school was prepared for the guidance of the town officials.

Pasay.—In August and September, an attempt was made to improve the sanitary condition of this suburb of Manila. As it is outside of the city limits, however, the ordinary laws in force in the city of Manila could not be taken advantage of and the town officials of San Antonio, of which Pasay is a barrio, were requested and have passed certain sanitary regulations for the town.

Culion.—The construction work done at Culion has already been reported on to some extent under the heading, "Culion leper colony division." However, a few additional facts of interest are given herewith: The cost of the construction of the residence for the physician at Culion was ₱4,722.77; the cost of warehouse was ₱5,932.55.

The new road constructed from Balala to Culion has a maximum grade of 2 per cent, and is 1,700 feet long. The present minimum width is four feet, but this can be increased to any width which the future needs of the colony may require. The cost of this work was approximately ₱500.

The new hospital, referred to in Culion report, was commenced under the supervision of the chief, sanitary engineering division, during February, but on March 23, he being ordered to Manila, the work was turned over to the chief of the colony.

During March surveys were made, and in April a preliminary study of a new street and park system for Culion was submitted.

Cavite.—Plans of the following sanitary systems were sent to the District Health Officer of Cavite: Septic absorbing, discharging vault; absorbing discharging catch basin; double section, filter discharging catch basin; tight vault for houses of two stories; privy with tight, vault, floor drain.

Lingayen, Pangasinan.—An estimate of the cost of installing a town well at Lingayen was submitted in May, 1908.

Provincial Jail, Tacloban, Leyte.—During October and December, 1907, plans were acted on, and recommendations were made for a provincial jail at Tacloban, Leyte. The regular design of septic vault designed for use in the city of Manila was used as a basis for a septic vault for the prison; the only change necessary was in the dimensions of the same.

Floor drain.—As an improvement on the old style bell trap cesspool a new style floor drain has been designed and approved by the Director of Health for use in the city of Manila.

In addition to the above specified work, including that mentioned in the tables published in the Appendix, a great deal of verbal information and instruction on sanitary matters has been given out by the chief of the division, it being the endeavor to aid the public in every way possible on all sanitary matters.

A tabulated record of the work done in Manila may be found in the statistical part of this report.

SAN LAZARO HOSPITALS DIVISION.

This division is made up of the cholera, plague, smallpox, leper, insane, opium habit, morgue and crematory, and miscellaneous departments.

The number of patients remaining at the close of the last annual report was 308; during the year there have been 934 admitted; 676 discharged, 13 transferred; 207 died, and 5 escaped. This leaves 347 patients to be carried over as remaining in the various departments, June 30, 1908.

Cholera hospital.—In the cholera department, there were admitted 128 male patients and 65 female patients, making a total of 193 patients, of whom 18 males and 4 females were discharged as not having cholera, thus reducing the actual number of cholera cases admitted to 171 patients, of whom 43 males and 60 females were discharged as cured, and 67 males and 39 females died, making the percentage of deaths of those admitted only about 59. Deducting the number of those who arrived at the hospital too late for treatment, the percentage of cures was about 43. The mortality in Manila during the epidemic of 1902 averaged about 80 per cent.

The treatment now employed in outline consists of:

Stimulation with strychnine sulphate, tincture of digitalis hypodermically, and the infusion of digitalis by the mouth; the latter being particularly useful in the reactionary stages of the disease, as it is both a stimulant and diuretic.

As a sedative stimulant, a tablet composed of morphine sulphate, digitalis, and hyoscine is used with good results in cases in which the condition of the stomach will tolerate this form of medication. The indication for quick relief in arterial spasm is best met by nitroglycerin.

Vomiting is treated by the administration of a tablet composed of cocaine, nux vomica, and capsicum, if the stomach is not too irritable.

Those cases in which there is marked shrinkage of the tissues, yet a fairly good heart action, are most favorable for the intravenous injection of normal salt solutions. It has been found that where the heart is very weak and the respiration labored, such treatment seems to hasten death by promoting pulmonary congestion.

During the stage of convalescence all food except milk and eggs should be withheld for a considerable time, and the closest attention paid to the kidneys.

Absolute rest is enjoined throughout the whole course of treatment.

Plague hospital.—In the plague pavilion there was only one case of this disease treated, and this was taken from the steamship *Ferd Laeisz,* which arrived here from Hongkong with the sick man aboard.

Smallpox hospital.—The admissions to this department were more numerous than during the previous year. The cases occurred mostly among the unvaccinated. Two hundred cases were admitted, of which 42 died, giving a mortality of 21 per cent. These figures, however, do not show the real incidence of the disease this year, because among them are included 20 cases of varioloid from Bilibid which were extremely mild on account of successful vaccination. By excluding these cases the mortality is 23⅓ per cent.

Leper hospital.—The following tabular statement will show the principal statistics of the leper department:

Race.	In hospital July 1, 1907.		Admitted.		Discharged.		Escaped.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Filipinos	126	88	13	6	2	1	------	3	22	15	115	75
Chinese	2	------	2	------	2	------	------	------	------	------	2	------
Total	128	88	15	6	4	1	------	3	22	15	117	75

These patients have been as contented as usual; the regular fiesta of San Lazaro took place in April, 1908, and the usual large crowd attended. The treatment with the X-ray went on throughout the year, and the patients treated either improved or remained the same. All were found positive microscopically in November, 1907; and in June, 1908, all were again found positive with the exception of one case.

Insane hospital.—At the close of the last annual report there were 76 male and 16 female insane patients remaining in the insane department. There have been admitted since that date 70 males and 12 females. Thirty-two patients have been discharged as cured and 17 have died, thus leaving in the hospital at the close of the fiscal year 105 male patients and 20 female patients, the majority of whom are from the provinces. The city patients are usually committed to the Hospicio de San José.

The number of patients in this department was as follows:

Race.	In hospital July 1, 1907.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	5	......	6	......	10	......	......	......	1	......
Europeans	2	......	......	......	......	......	......	......	2	......
Filipinos	65	16	60	12	14	6	14	2	97	20
Chinese	2	......	1	......	......	......	......	......	3	......
Others	2	......	3	......	2	......	1	......	2	......
Total	76	16	70	12	26	6	15	2	105	20

There were no deaths from any unusual or epidemic diseases, most of them being old cases of simple mania or simple melancholia, merging into terminal dementia. There was one death due to pulmonary tuberculosis and one sudden death from an organic heart lesion.

Practically all cases improve after entrance, especially as regards their physical condition, on account of the regular meals and the effect of the treatment and care, and freedom from irritation. As a rule the mental condition undergoes considerable improvement also, and in many cases cures are effected. From the foregoing figures, it will be noted that the percentage of recoveries is fully as large as in similar institutions in the United States and Europe, where experts, especially trained in the treatment of nervous and mental diseases, are employed.

The majority of patients in this department would, perhaps, come under the head of harmless insane, but as there is no one to look after them outside, it is impossible to release them. On the other hand, there have been received a good many criminal insane, including a considerable number of murderers from Bilibid Prison, and while, in some cases, these patients appear normal as regards all ordinary actions, still it is a responsibility not to be undertaken lightly to set free a patient once found to be afflicted with homicidal mania.

The insane have been used in the work of the hospital throughout the year, particularly in gardening. A considerable amount of vegetables has been raised, and during the coming year this amount is expected to be largely increased. The vegetables are particularly welcome at the present time when the cost of so many articles of subsistence has advanced, making it especially hard to keep the daily average within the limit allowed.

It was mentioned in the last annual report that the new insane ward was nearly ready for occupancy. This ward was occupied in August and has proved satisfactory in every way. A few improvements have been made; a ridge of cement was laid around the bath rooms and closets to prevent the water from running out on the floor of the wards, and grated iron doors were installed in the place of the outside doors, which were found to be not strong enough.

The female insane now occupy the ward formerly occupied by the males, and an entrance directly from the ward to the dining room has been made so that the women do not need to leave the ward for any purpose.

The women have, as usual, done a large amount of sewing for the patients in the different departments.

Opium hospital.—During February, 1908, the opium-habit patients were transferred from the San Juan de Dios Hospital to the San Lazaro Hospital. There were 383 male Chinese admitted; 365 were discharged as cured, while of the 14 male and 3 female Filipino patients received, only 2 men and 1 woman remain.

The duration of the treatment is limited by law to sixty days, but the actual time required to effect a cure in favorable cases is much less than this. These cases as a rule have been discharged as cured after being held about ten days without opium. They have practically all been released in good physical condition, and in such a state that it would be possible to quit the habit for good with comparatively little effort, if there exists a desire to do so.

Some cases have been reduced gradually, but the greater part can be separated from their opium at once.

A certain amount of stimulation is used and some bromide given. There have been no deaths and very little serious illness consequent on the withdrawal of opium.

Morgue and crematory.—In the morgue and crematory departments there were 123 autopsies, 21 cremations, 371 pauper burials, and 184 family burials.

Cremation is not popular in the Philippine Islands except among the Japanese and East Indians, who always dispose of their dead in this way. It should be stated that this method is also growing in favor among the Americans.

Miscellaneous diseases.—The classification "miscellaneous" includes tetanus, measles, and diphtheria cases. The statistics show that there were six tetanus cases, with four deaths and two recoveries. Twenty-five cases of measles with no deaths, and five cases of diphtheria with two deaths and three recoveries are registered. The embarrassment which has heretofore been felt in handling these cases will shortly be relieved by the construction of a new ward, an appropriation of ₱30,000 for this purpose having been made by the Legislature.

A large part of the opposition to the enforced hospitalization of dangerous communicable diseases has been overcome by a policy which permits the immediate relatives of patients to visit them in the hospital and in cases of serious illness to remain with them. These privileges are subject to such restrictions and regulations as may be necessary to protect the public health. The effect has been to gain the confidence of the people and is undoubtedly aiding in preventing the hiding of cases which so largely prevailed in the early days.

DIVISION OF STATISTICS.

The division of statistics is the oldest division of the Bureau, being the successor of the office of the secretary of the board of health, and was organized by the Provost Marshal General before the establishment of civil government. This division is charged with collecting, classifying, and preparing for publication the vital statistics for the Philippine Islands.

Within the last few years a very complete system of municipal and provincial statistical reports has been introduced, but owing to the scarcity of physicians in the remote districts, the data are necessarily very defective, hence the published statistics are principally those of the city of Manila.

The provincial reports are carefully worked over and will be valuable for comparison later on. The international system of nomenclature is used exclusively and has been a valuable help in placing the work on a uniform basis.

The provincial and municipal reports are more comprehensive than would ordinarily be required, if it were not for the fact that they are maintained as much for the educational value as for statistical purposes.

The tables published in the Appendix to this report will show the scope and character of the duties of this division.

The credit of whatever has been accomplished is justly due to the chief of the division, Dr. Manuel Gomez, who has had charge of this important work, first as secretary of the Board of Health, and later on, when the Bureau was organized, as chief of the division, since the establishment of the first American board of health in the Philippine Islands.

SUMMARY.

The following are a few of the results accomplished during the year:

1. One million six hundred eighty-six thousand seven hundred and fifty-seven persons were vaccinated by the systematic method, and over 400,000 were revaccinated in communities where it was especially necessary, thus making a total of over 2,000,000 persons protected from the danger of smallpox. These figures do not include vaccinations in the Army, Navy, Constabulary, and other public services.

2. Owing to the benefits of leper segregation, at least 300 less people contracted the disease this year than formerly.

3. At least twenty-five towns have been provided with artesian wells, as the result of the constant agitation by this Bureau for better water

supplies. They will probably save at least twenty lives for each 1,000 who use the water from them.

4. The search for a remedy for the cure of leprosy has been persistently carried out during the year and apparently by the continuation of the work which has been done formerly by this Bureau, means have been found in certain select cases to at least stop the further progress of the disease in an individual, and in some cases apparently to accomplish a cure, such as has been done in the case reported under the head of "X-ray treatment of leprosy" on page 69.

5. Forty-one thousand eight hundred and ninety-six professional visits were made to poor persons in the city of Manila; 26,000 prescriptions were filled, and medical and surgical aid was given in every province throughout the Philippine Archipelago.

6. One thousand five hundred and fifty-four lepers were transferred to Culion.

7. After overcoming almost insurmountable obstacles, the first reënforced-concrete building with a floor space of 3,264 square feet was completed, and a large hospital well started at the Culion leper colony, and enough nipa buildings completed to increase the capacity of the colony from 1,000 to 1,500.

8. A large part of the work of furnishing the data for the plans for the hospitals at Baguio, at Manila, at Bilibid and at the Culion leper colony was done by this office.

9. The cholera measures which were carried out, no doubt resulted in this disease not becoming pandemic in the Philippines.

10. Medical, surgical, and administrative attendance was furnished in nine different hospitals, which have a daily average of over 1,100 patients, or 401,500 hospital days per annum, and relief furnished to at least 5,000 persons who were not required to remain in the hospital.

11. Sanitary supervision of buildings, streets, vehicles, plumbing, licenses, administration of the Food and Drugs Act, and many other things too numerous to mention engaged the attention of the Bureau every day of the year.

POLICY.

The efforts of the Bureau during the year were directed more and more toward the laying of a sound foundation upon which to erect a sanitary superstructure that will endure. The efforts of the earlier years of modern health work in the Philippines were necessarily restricted to battling with actual outbreaks of great devastating diseases like cholera, plague, and smallpox, rather than with the conditions which made these diseases possible. In other words, symptoms had to be treated rather than causes. Persons actually suffering with cholera had to be cared for rather than to install a permanent system of water supply which would make a cholera outbreak impossible at a later day. The resources of the Islands are such at present that greater sums than those set aside during the past few years are not available. It has, therefore, become the policy of the Bureau to take each peso that becomes available for health work, and vaccinate, say forty people with it, thus protecting them against smallpox; or to free a certain number of individuals of intestinal parasites, thus saving them from many other diseases; or to invest it with others in artesian wells; rather than use it for sweeping sidewalks, penning up pigs, or cleaning back yards. All of these latter measures are highly desirable, but when there is not sufficient money to accomplish every needful thing, it would seem that there is but one course to pursue, and that is to invest it in those things which will give the greatest permanent result.

This policy has given rise to considerable adverse criticism, which time only can counteract. In the future the permanent results will speak for themselves. The achievements of the reduction in the number of cases of smallpox and leprosy, and the lowered mortality where artesian wells are in use, are already beginning to attract attention, and will soon demonstrate the superiority of this new departure over the old empirical "clean up" policy.

Briefly, then, it is believed that the direct road to the goal of a permanent low morbidity and mortality rate in the Philippine Islands is through improved water supplies, vaccination, elimination of intestinal parasites, systematic warfare against tubercle bacilli, the eradication of the malarial mosquitoes, and through improved hygiene to combat infant mortality.

RECOMMENDATIONS.

In addition to the work already being done, it is recommended:

1. That in view of the fact that the elimination of the intestinal parasites of the residents of the Philippine Islands bids fair to save a large number of lives, steps should be taken to accomplish this work and render conditions such that reinfection will not occur. To bring this about, a system for the disposal of night soil should be inaugurated, preferably by the Oriental method whereby this substance is used for fertilizing mulberry trees from which a profit may be realized instead of an additional burden upon the taxpayers.

2. That the sum of ₱25,000 be set aside for building a few small isolating pavilions and treating therein a limited number of tubercular cases, and that an outdoor dispensary be established in the city of Manila at which only persons afflicted with tuberculosis be treated. One of the principal objects of such a dispensary to be its use as a means of diffusing knowledge of the home treatment of this disease and the precautions that should be taken in order not to infect others.

3. That at least three provincial hospitals with a capacity of thirty beds each be provided; the initial cost of each to be about ₱30,000.

4. That a committee of five physicians be named to make a further study of the causes of the excessive infant mortality with the view of reducing the same.

5. That an extensive laboratory study be made of cholera, with a view of ascertaining the exact cause of the appearance and disappearance of the cholera spirilli in the Philippine Islands.

6. That the question of a law to provide for the care of the insane be considered by the next legislature.

Very respectfully,

VICTOR G. HEISER,
Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service, Director of Health.

The SECRETARY OF THE INTERIOR,
Manila, P. I.

APPENDIX.

STATISTICAL TABLES, BUREAU OF HEALTH, JULY 1, 1907, TO JUNE 30, 1908.

GENERAL STATISTICS.

[Unless otherwise stated these statistics are for the fiscal year ended June 30, 1908.]

Population of the city of Manila.

[Health census of 1907.]

Nationality.	Population.	Nationality.	Population.
Americans	5,199	Chinese	18,028
Filipinos	195,292	All others	1,148
Spaniards	2,903		
Other Europeans	977	Total	223,542

Births reported.[1]

Nationality.	Male.	Female.	Total.	Annual average per 1,000.
Americans	58	44	102	19.61
Filipinos	4,427	4,060	8,487	43.45
Spaniards	20	20	40	13.77
Other Europeans	9	9	18	18.42
Chinese	15	10	25	1.37
All others	2		2	1.74
Total and average	4,531	4,143	8,674	38.80

[1] Incomplete.

Births, by districts.[1]

Health districts.	Number of legitimates.			Number of illegitimates.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.	
No. 1, Intramuros	516	425	941	24	32	56	997
No. 2, Meisic	1,051	972	2,023	126	106	232	2,255
No. 4, Sampaloc	796	710	1,506	126	115	241	1,747
No. 5, Tondo	1,187	1,150	2,337	146	117	263	2,600
No. 6, Paco	548	503	1,051	11	13	24	1,075
Total	4,098	3,760	7,858	433	383	816	8,674

[1] Incomplete.

Births, by districts, and annual birth rate per 1,000.

Health districts.	Population.	Births.	Annual rate per 1,000.
No. 1, Intramuros	30,649	997	32.52
No. 2, Meisic	82,397	2,255	27.36
No. 4, Sampaloc	35,475	1,747	49.25
No. 5, Tondo	53,855	2,600	48.27
No. 6, Paco	21,166	1,075	50.78
Total and average	223,542	8,674	38.80

Births, by districts, according to number of children borne by mother.

Order in which the child was born.	Health districts.										Total.	
	No. 1.		No. 2.		No. 4.		No. 5.		No. 6.			
	Living.	Still born.	Living.	Still born.	Living.	Still born.	Living.	Still born.	Living.	Still born.	Living.	Still born.
First	233	14	646	24	463	22	516	17	241	11	2,099	88
Second	198	4	480	9	320	15	526	17	207	2	1,731	47
Third	165	8	354	10	297	15	448	6	188	4	1,452	43
Fourth	127	6	249	13	194	10	343	15	136	4	1,049	48
Fifth	84	5	179	10	149	4	250	4	96	2	758	25
Sixth	59	3	104	4	93	2	169	6	61	2	486	17
Seventh	55	2	70	6	76	2	105	7	38	4	344	21
Eigth	29	1	62	1	44	2	93	4	41	2	269	10
Ninth	17		42	1	39	5	58	4	21		172	10
Tenth	10		29	3	26	3	33	1	17		115	7
Eleventh	3	1	15		19	2	27	1	15		79	4
Twelfth	9	2	7	1	12	3	19		9	1	56	7
Thirteenth	5	1	6		8		5		2	1	26	2
Fourteenth	2		7	1	3		6		1		19	1
Fifteenth			1		3	1	2	2	2		8	3
Sixteenth	1		3				1				5	
Seventeenth			1		1		3				5	
Twentieth						1	1				1	1
Total	997	47	2,255	83	1,747	87	2,600	84	1,075	33	8,674	334

Number of deaths and death rate per 1,000 among residents, by nationalities.

Nationality.	Number of deaths.	Annual average per 1,000.	Nationality.	Number of deaths.	Annual average per 1,000.
Americans	51	9.80	Chinese	337	18.69
Filipinos	8,469	43.36	All others	21	18.37
Spaniards	50	17.22			
Other Europeans	17	17.40	Total and average	8,945	40.01

A classified report of all deaths occurring in Manila, including transients.

Males.	Number.	Females.	Number.
Married	966	Married	702
Widowers	260	Widows	489
Single	848	Single	265
Boys	3,106	Girls	2,654
Condition not stated	45	Condition not stated	16
Total	5,225		4,126
Grand total			9,351

Stillbirths, 335.

Number of deaths with medical attendance	4,919
Number of deaths without medical attendance	4,432
Total	9,351

Deaths, by age, including transients.

Age.	Number.	Age.	Number.
Under 30 days	994	40 years to 50 years	509
30 days to 1 year	3,190	50 years to 60 years	438
1 year to 2 years	756	60 years to 70 years	250
2 years to 5 years	586	70 years to 80 years	181
5 years to 10 years	226	80 years to 90 years	111
10 years to 15 years	112	90 years to 100 years	38
15 years to 20 years	292	Over 100 years	19
20 years to 25 years	398	Unknown	17
25 years to 30 years	466		
30 years to 40 years	768	Total	9,351

Deaths, by districts, including transients.

Health districts.	Population.	Deaths.	Annual rate per 1,000.
No. 1, Intramuros	30,649	1,191	38.85
No. 2, Meisic	82,397	2,315	28.09
No. 4, Sampaloc	35,475	1,687	47.55
No. 5, Tondo	53,855	3,297	61.21
No. 6, Paco	21,166	861	40.67
Total and average	223,542	9,351	41.83

Comparative mortality from January 1, 1901, to June 30, 1908.

Month.	1901		1902		1903		1904	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	753	[1]36.25	760	[1]36.58	602	[1]28.96	796	[2]42.64
February	689	[1]36.72	706	[1]37.63	511	[1]27.23	709	[2]40.59
March	885	[1]42.66	770	[1]37.06	539	[1]25.94	751	[2]40.23
April	886	[1]44.07	1,327	[1]66.01	549	[1]27.31	748	[2]41.40
May	903	[1]43.47	1,688	[1]81.26	770	[1]37.06	766	[2]41.08
June	621	[1]30.89	1,418	[1]70.54	592	[1]29.45	800	[2]44.28
July	608	[1]29.27	2,223	[1]107.02	620	[2]33.21	866	[2]46.39
August	702	[1]33.79	1,712	[1]82.42	862	[2]46.17	1,032	[2]55.28
September	767	[1]38.15	1,132	[1]56.31	1,228	[2]67.97	1,064	[2]58.89
October	855	[1]41.16	927	[1]44.62	1,217	[2]65.19	1,018	[2]54.58
November	848	[1]42.18	1,035	[1]51.48	974	[2]53.91	957	[2]52.97
December	858	[1]41.30	753	[1]36.25	894	[2]47.89	794	[2]42.58
Total	9,375	38.30	14,451	59.04	9,358	40.27	10,301	46.83

Month.	1905		1906		1907		1908	
January	685	[2]36.69	737	[2]39.47	632	[3]33.31	1,117	[3]58.87
February	608	[2]36.05	595	[2]35.28	473	[3]27.59	733	[3]41.29
March	563	[2]30.15	600	[2]32.13	464	[3]24.45	720	[3]37.94
April	530	[2]29.32	555	[2]30.27	416	[3]22.65	626	[3]34.09
May	526	[2]28.16	600	[2]32.13	462	[3]24.35	633	[3]33.34
June	593	[2]32.81	693	[2]36.72	402	[3]21.89	678	[3]36.92
July	747	[2]40.00	1,451	[2]77.72	515	[3]27.14	----------	----------
August	841	[2]45.03	1,182	[2]68.81	653	[3]34.41	----------	----------
September	1,013	[2]56.06	835	[2]46.22	768	[3]41.82	----------	----------
October	850	[2]45.51	684	[2]36.64	877	[3]46.22	----------	----------
November	944	[2]52.24	653	[2]36.14	725	[3]39.48	----------	----------
December	841	[2]45.03	597	[2]31.98	900	[3]47.48	----------	----------
Total	8,741	39.74	9,182	41.07	7,287	32.59	----------	----------

[1] Death rate computed on population of 244,732 (Health Department's census).
[2] Death rate computed on population of 219,941 (Official census, 1903).
[3] Death rate computed on population of 223,542 (Health census, 1907).

Comparative mortality with same period of previous years.

Year.	First quarter.		Second quarter.		Third quarter.		Fourth quarter.	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
1901	2,327	42.98	2,410	48.97	2,077	37.49	2,561	46.22
1902	2,236	41.25	4,433	80.89	5,067	91.46	2,715	49.00
1903	1,652	30.48	1,911	34.87	2,710	48.91	3,085	55.68
1904	2,256	41.16	2,314	42.22	2,962	53.46	2,769	49.98
1905	1,856	34.24	1,649	30.09	2,601	46.94	2,635	47.56
1906	1,932	35.64	1,848	33.72	3,468	62.59	1,934	34.90
1907	1,569	28.48	1,280	22.98	1,936	34.38	2,502	44.42
1908	2,570	46.14	1,937	34.77	----------	----------	----------	----------

Number of deaths, with causes, occurring among permanents in the city of Manila.

[Stillbirths not included in computing death rate of the city.]

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.									
1. Typhoid fever (abdominal typhus)			2	1	49	25			77
4. Intermittent fever and malarial cachexia			1		78	31	44		154
4a. Malarial cachexia					6	4			10
5. Smallpox	2				29	36	2		69
6. Measles					3	2			5
7. Scarlet fever					1				1
8. Whooping cough					4	5			9
9. Diphtheria and croup					2	7			9
10. Influenza	1				6	13	7		27
12. Asiatic cholera	1		7	2	181	133	17		341
14. Dysentery	1		12		176	150	18		357
17. Leprosy					24	15			39
18. Erysipelas					3	1			4
19. Other epidemic diseases (beri-beri)	1		1		231	222	36	1	492
20. Purulent infection and septicæmia	1				8	9	4		22
22. Malignant pustule					2	1			3
26. Tuberculosis of the larynx					7	5			12
27. Tuberculosis of the lungs	1		7	1	526	425	76		1,036
28. Tuberculosis of the meninges		1	1		15	19	1		37
29. Abdominal tuberculosis					18	19			37
30. Pott's disease					1	2			3
33. Tuberculosis of other organs					2	4			6
34. General tuberculosis	1				18	15	1	1	36
35. Scrofula					1				1
36. Syphilis					6	1	6		13
39. Cancer and other malignant tumors of the buccal cavity					6	9			15
40. Cancer and other malignant tumors of the stomach and liver			1		3	2	2		8
41. Cancer and other malignant tumors of the peritoneum, intestines, and rectum					1	1			2
42. Cancer and other malignant tumors of the female genital organs						11			11
43. Cancer and other malignant tumors of the breast						4			4
44. Cancer and other malignant tumors of the skin						6			6
45. Cancer and other malignant tumors of other organs or of organs not specified			4		8	4	1		17
47. Acute articular rheumatism					2	5			7
48. Chronic rheumatism and gout					28	11			39
49. Scurvy					2	2			4
50. Diabetes	1				1	1	1		4
51. Exophthalmic goiter					1	1			2
52. Addison's disease	1								1
53. Leukæmia						1			1
54. Anæmia chlorosis			1		2	15	1	1	20
55. Other general diseases					1				1
56. Acute and chronic alcoholism	1				1				2
59. Other chronic poisoning							3		3
II. Diseases of the nervous system and of the organs of special sense.									
60. Encephalitis				1		2			3
61. Simple meningitis			6	1	254	266	1		528
62. Progressive locomotor ataxia					1				1
63. Other diseases of the spinal cord					4	3			7
64. Congestion and hemorrhage of the brain	2		1		55	47	3		108
65. Softening of the brain			1		1	1	6		9
66. Paralysis without specified cause					4		3		7
67. General paralysis					4	3	1		8
68. Other forms of mental alienation					9	2	1		12
69. Epilepsy					3	1	2		6
71. Convulsions (under 5 years)	1				938	780	3	6	1,728
72. Tetanus			1		71	70	1		143
74. Other diseases of the nervous system	2				4	1	1		8

Number of deaths, with causes, occurring among permanents in the city of Manila—Continued.

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
III. Diseases of the circulatory system.									
77. Pericarditis					1	1			2
78. Acute endocarditis					6	9			15
79. Organic diseases of the heart	4		3	2	39	29	18	1	91
80. Angina pectoris					24	21			45
81. Diseases of the arteries (atheroma, aneurism, etc.)	3				10	9	1		23
82. Embolism and thrombosis			1			2			3
85. Hemorrhages					2	3			5
IV. Diseases of the respiratory system.									
88. Diseases of the larynx					3	2			5
90. Acute bronchitis					363	299	7	1	670
91. Chronic bronchitis	1				189	189	20		399
92. Broncho-pneumonia	1				30	25	1		57
93. Pneumonia	2		1	1	25	9	1		39
94. Pleurisy			1		2	1			4
95. Congestion and apoplexy of the lungs				1	12	6			19
96. Gangrene of the lungs						1			1
97. Asthma			1		10	18	8		37
98. Pulmonary emphysema			1		1	1			3
99. Other diseases of the respiratory system (phthisis excepted)					2	4			6
V. Diseases of the digestive system.									
100. Diseases of the mouth and its adnexa					1				1
101. Diseases of the pharynx					2	5			7
103. Ulcer of the stomach					4	4			8
104. Other diseases of the stomach (cancer excepted)			1		10	9	2		22
105. Diarrhea and enteritis (under 2 years)		1	1	3	136	128	8	1	278
105a. Chronic diarrhea and enteritis (under 2 years)					103	91	1	1	196
106. Diarrhea and enteritis (2 years and over)	2		1	1	142	115	1		262
107. Intestinal parasites						2			2
108. Hernias and intestinal obstructions	1				20	3	6		30
109. Other diseases of the intestines					1				1
110. Acute yellow atrophy of the liver			1						1
112. Cirrhosis of the liver					6	6			12
113. Biliary calculi					3	1			4
114. Other diseases of the liver	2		4		13	4			23
115. Diseases of the spleen					1				1
116. Simple peritonitis (nonpuerperal)					10	2			12
118. Appendicitis and abscess of the iliac fossa					8	1			9
VI. Diseases of the genito-urinary system and its adnexa.									
119. Acute nephritis		1			17	12	1		31
120. Bright's disease	1	1	1		44	51	3		101
121. Other diseases of the kidneys and their adnexa					1	1			2
122. Calculi of the urinary tract					1				1
123. Diseases of the bladder					4	2			6
127. Metritis						6			6
128. Uterine hemorrhage (nonpuerperal)						2			2
130. Other diseases of the uterus						1			1
131. Cysts and other tumors of the ovary						1			1
VII. The puerperal state.									
134. Accidents of pregnancy						4			4
135. Puerperal hemorrhage						30			30
136. Other accidents of labor						8			8
137. Puerperal septicæmia				1		34			35
138. Puerperal albuminuria and convulsions						8			8

Number of deaths, with causes, occurring among permanents in the city of Manila—Continued.

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.
VIII. Diseases of the skin and cellular tissue.									
142. Gangrene					4	1			5
143. Furuncle					2	1			3
144. Acute abscess, phlegmon					2				2
145. Other diseases of the skin and its adnexa	1								1
IX. Diseases of the organs of locomotion.									
146. Nontuberculous diseases of the bones					7	8			15
X. Malformations.									
150. Congenital malformations (stillbirths excluded)			1		7				8
XI. Early infancy.									
151. Congenital debility, icterus and sclerema	5	2	1	3	286	201		1	499
152. Other diseases peculiar to early infancy					18	12			30
153. Lack of care					19	24			43
XII. Old age.									
154. Senile debility					54	124			178
XIII. External causes.									
155. Suicide by poison			1						1
159. Suicide by firearms					1				1
161. Suicide by jumping from high places			1						1
164. Fractures					6	1	1		8
165. Dislocations					1				1
166. Other accidental traumatisms	2		1		18	6	9		36
167. Burns and scalds					2	6			8
172. Accidental drowning	1				15	6	5		27
173. Inanition (starvation)	2				4	4			10
174. Absorption of deleterious gases (nonsuicidal)					1	1			2
175. Other acute poisonings			1			1			2
176. Other external violence					1				1
XIV. Ill-defined diseases.									
177. Dropsy					1	1			2
179. Causes of death unspecified or ill defined				1	23	10	2		36
Total	45	6	69	19	4,519	3,950	323	14	8,945
Grand total	51		88		8,469		337		8,945

Number of deaths, with causes, occurring among transients in the city of Manila.

[Stillbirths not included in computing death rate of the city.]

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.									
1. Typhoid fever (abdominal typhus)					5	2			7
4. Intermittent fever and malarial cachexia	1				7	4	9		21
4a. Malarial cachexia					1	5			6
5. Smallpox	1				5	1			7
9a. Diphtheria	1								1
10. Influenza							1		1
12. Asiatic cholera		1			13	10			24
14. Dysentery	2				6	6			14
18. Erysipelas					1				1
19. Other epidemic diseases (beri-beri)			2		11	8	1		22
20. Purulent infection and septicæmia					4	1	1		6
26. Tuberculosis of the larynx					1				1
27. Tuberculosis of the lungs			2		20	16	1	1	40
29. Abdominal tuberculosis			1		2	3			6
34. General tuberculosis					5	2			7
36. Syphilis			1			1			2
40. Cancer and other malignant tumors of the stomach and liver					2				2
41. Cancer and other malignant tumors of the peritoneum, intestines, and rectum					1				1
42. Cancer and other malignant tumors of the female genital organs						2			2
43. Cancer and other malignant tumors of the breast						1			1
45. Cancer and other malignant tumors of other organs or of organs not specified					4				4
56. Acute and chronic alcoholism					1				1
II. Diseases of the nervous system and of the organs of special sense.									
61. Simple meningitis			1		8	3			12
64. Congestion and hemorrhage of the brain			1			1	1		3
71. Convulsions (under 5 years)					17	13			30
72. Tetanus					1	1			2
74. Other diseases of the nervous system	1								1
III. Diseases of the circulatory system.									
77. Pericarditis					2				2
78. Acute endocarditis						2			2
79. Organic diseases of the heart				1	9	2			12
80. Angina pectoris					2	2			4
81. Diseases of the arteries (atheroma, aneurism, etc.)					1				1
85. Hemorrhages							1		1
IV. Diseases of the respiratory system.									
90. Acute bronchitis					9	5			14
91. Chronic bronchitis					7	2			9
92. Broncho-pneumonia					2				2
93. Pneumonia					8				8
94. Pleurisy						1			1
95. Congestion and apoplexy of the lungs					1	1			2
97. Asthma					3	1			4
99. Other diseases of the respiratory system (phthisis excepted)					1				1
V. Diseases of the digestive system.									
101. Diseases of the pharynx						1			1
104. Other diseases of the stomach (cancer excepted)				1	2	1			4
105. Diarrhea and enteritis (under 2 years)		1			6	5	1		13
105a. Chronic diarrhea and enteritis (under 2 years)					4	3			7
106. Diarrhea and enteritis (2 years and over)					6	7			13
108. Hernias and intestinal obstructions						4			4
112. Cirrhosis of the liver					1				1
113. Biliary calculi					1				1
114. Other diseases of the liver	2		2		1				5
116. Simple peritonitis (nonpuerperal)						1			1
118. Appendicitis and abscess of the iliac fossa						1			1

Number of deaths, with causes, occurring among transients in the city of Manila—Continued.

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.
VI. Diseases of the genito-urinary system and its adnexa.									
119. Acute nephritis	1				2	2			5
120. Bright's disease					5	1			6
122. Calculi of the urinary tract					1				1
123. Diseases of the bladder					1				1
131. Cysts and other tumors of the ovary						1			1
VII. The puerperal state.									
135. Puerperal hemorrhage						2			2
137. Puerperal septicæmia						1			1
138. Puerperal albuminuria and convulsions						2			2
VIII. Diseases of the skin and cellular tissue.									
143. Furuncle					2		1		3
XI. Early infancy.									
151. Congenital debility, icterus and sclerena	1				1	1			3
153. Lack of care						1			1
XII. Old age.									
154. Senile debility					1	2			3
XIII. External causes.									
164. Fractures					1				1
166. Other accidental traumatisms					5				5
167. Burns and scalds					1	1			2
176. Other external violence					23				23
XIV. Ill-defined diseases.									
179. Causes of death unspecified or ill defined	1				5		1		7
Total	11	2	10	2	229	133	18	1	406
Grand total	13		12		362		19		406

Number of deaths by nationality, sex, and age.

Causes of death.	Less than 1 day to 30 days.								From 30 days to 1 year.								From 1 to 5 years.								From 5 to 10 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
I. General diseases.																																
1. Typhoid fever (abdominal typhus)													1	1						1	4	1							6	5		
4. Intermittent fever and malarial cachexia													2	2							4	2							7	8		
4a. Malarial cachexia																						2							1	1		
5. Smallpox													4	4							14	23							7	6		
6. Measles													1								2	2										
7. Scarlet fever													1																			
8. Whooping cough													3	2							1	3										
9. Diphtheria and croup														1							1	5								1		
10. Influenza														1			1				2	3								2		
12. Asiatic cholera									1				1	1				1			22	18							18	7		
14. Dysentery													6	5					3		87	78					1		32	31		
18. Erysipelas													1	1															1			
19. Other epidemic diseases (beri-beri)					14	7							135	128							12	15							3	3		
20. Purulent infection and septicæmia													1																			
27. Tuberculosis of the lungs													2	2							15	14							4	7		
28. Tuberculosis of the meninges													4	6				1			8	8								1		
29. Abdominal tuberculosis													1								5	8							1			
30. Pott's disease																						1										
33. Tuberculosis of other organs																					1											
34. General tuberculosis													1	5								1							1	3		
35. Scrofula													1																			
36. Syphilis													3	2							1											
47. Acute articular rheumatism														1																		
49. Scurvy																														1		
50. Diabetes													1																			
53. Leukæmia																														1		
54. Anæmia, chlorosis																					1											
II. Diseases of the nervous system and the organs of special sense.																																
61. Simple meningitis					2	3					5		134	142					1	1	108	111	1				1		9	9		
64. Congestion and hemorrhage of the brain					2									1							1	1										
71. Convulsions (under 5 years)					186	154	2	2	1				757	626	1	4					12	13										
72. Tetanus					63	63							1	1								1					1		1			
74. Other diseases of the nervous system																									1				1			

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	Less than 1 day to 30 days.								From 30 days to 1 year.								From 1 to 5 years.								From 5 to 10 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III. Diseases of the circulatory system.																																
77. Pericarditis																														1		
78. Acute endocarditis																					1											
85. Hemorrhages					1																1									1		
IV. Diseases of the respiratory system.																																
88. Diseases of the larynx													2	2							1											
90. Acute bronchitis					8	11	1						306	227	2	1					54	61	1						2	2		
91. Chronic bronchitis									1				95	83							51	45							2	3		
92. Broncho-pneumonia													10	8							9	10								1		
93. Pneumonia					1				1				6								3	5										
95. Congestion and apoplexy of the lungs					9	3								1							1											
97. Asthma																						1								1		
99. Other diseases of the respiratory system (phthis excepted)						1																										
V. Diseases of the digestive system.																																
100. Diseases of the mouth and its adnexa													1																			
101. Diseases of the pharynx																					1	3								1		
104. Other diseases of the stomach (cancer excepted)						1						1	4	5								2										
105. Diarrhea and enteritis (under 2 years)					4	4				2	1	2	95	79	4	1				1	43	50										
105a. Chronic diarrhea and enteritis (under 2 years)													48	31	1						59	63		1								
106. Diarrhea and enteritis (2 years and over)																	2				108	87							14	7		
107. Intestinal parasites																						2										
108. Hernia and intestinal obstructions					3				1				3	1							2											
114. Other diseases of the liver													2																			
116. Simple peritonitis (nonpuerperal)					1																3											
VI. Diseases of the genito-urinary system and its adnexa.																																
119. Acute nephritis													4	1							3	3				1			1	1		
120. Bright's disease														2							8	4										

VIII. Diseases of the skin and cellular tissue.																																
142. Gangrene																					1	1										
143. Furuncle																					1											
144. Acute abscess, phlegmon					1								1																			
145. Other diseases of the skin and its adnexa									1																							
IX. Diseases of the organs of locomotion.																																
146. Nontuberculous diseases of the bones													2	3							4	5										
X. Malformations.																																
150. Congenital malformations (stillbirths excepted)					5														1		1											
XI. Early infancy.																																
151. Congenital debility, icterus and sclerema	4	2	1	3	237	156		1	2				48	46							2											
152. Other diseases peculiar to early infancy					18	11								1																		
153. Lack of care					2	3							16	20							1	2										
XIII. External causes.																																
164. Fractures																													1			
166. Other accidental traumatisms																						2							1			
167. Burns and scalds																					1	2							1	1		
172. Accidental drowning																	1				1	1							2	3		
173. Inanition (starvation)	2				1								2	3							1	1										
XIV. Ill-defined diseases.																																
179. Causes of death unspecified or ill defined					1								4	2							3								1	1		
Total	6	2	1	3	559	417	3	3	8	2	6	3	1,710	1,447	8	6	4	2	5	3	664	661	2	1	1	1	3	---	117	104	---	---
Grand total	8		4		976		6		10		9		3,157		14		6		8		1,325		3		2		3		221		------	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 10 to 15 years.								From 15 to 20 years.								From 20 to 25 years.								From 25 to 30 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
I. General diseases.																																
1. Typhoid fever (abdominal typhus)					5	4							20	6							8	3					1		3	2		
4. Intermittent fever and malarial cachexia					6	2							8	3							12	6	1						8	7	9	
4a. Malarial cachexia													1	2								1							1			
5. Smallpox							2						5								1	1							1	1		
9a. Diphtheria																	1															
10. Influenza														1									1						1		2	
12. Asiatic cholera					10	4	1					1	16	12					1		29	22	1				4		34	19	3	
14. Dysentery					8	4							3	4					1		4	6	2		1		3		1	7	4	
17. Leprosy						1							3	5							7	2							2	2		
19. Other epidemic diseases (beri-beri)					4	2							14	9	2				2		12	12					1		12	18	3	
20. Purulent infection and septicæmia													1	1							3	2	1						1	1		
22. Malignant pustule																					1	1										
26. Tuberculosis of the larynx													2								2								1			
27. Tuberculosis of the lungs					10	11					1		49	32	1						70	70	1				2		83	64	9	1
28. Tuberculosis of the meninges							1						2	1							1	2										
29. Abdominal tuberculosis					1								2	3							1	2							2	3		
30. Pott's disease					1																											
33. Tuberculosis of other organs																						1										
34. General tuberculosis					1								1	1							3	1							5	3		
36. Syphilis													1																			
40. Cancer and other malignant tumors of the stomach and liver																													3			
41. Cancer and other malignant tumors of peritoneum, intestines, and rectum																					1											
42. Cancer and other malignant tumors of the female genital organs																														2		
45. Cancer and other malignant tumors of other organs or of organs not specified																													1		1	
47. Acute articular rheumatism						1															1	1										
48. Chronic rheumatism and gout																													1	1		
49. Scurvy						1															1											
51. Exophthalmic goiter																														1		
54. Anæmia, chlorosis													1	1								3								2		1
59. Other chronic poisonings																															1	
II. Diseases of the nervous system and of the organs of special sense.																																
61. Simple meningitis					1								2								2	1								1		

63. Other diseases of the spinal cord																														1		
64. Congestion and hemorrhage of the brain							1														4								8	2		
65. Softening of the brain																															1	
66. Paralysis without specified cause																													1			
67. General paralysis																						1										
68. Other forms of mental alienation																					1								1	1		
69. Epilepsy													1																	1		
72. Tetanus					1								1	1							2									1		
74. Other diseases of the nervous system													1								1											
III. Diseases of the circulatory system.																																
77. Pericarditis																													1			
78. Acute endocarditis						3								1								1								1		
79. Organic diseases of the heart					2	1							2	2							1	2		1				1	8	5	1	
80. Angina pectoris						1							1	1								1							4	3		
81. Diseases of the arteries, atheroma, aneurism, etc													1												1							
82. Embolism and thrombosis																														1		
85. Hemorrhages														1																		
IV. Diseases of the respiratory system.																																
91. Chronic Bronchitis					1	1							1	1							2	4								2		
92. Broncho-pneumonia						1								2							1								4			
93. Pneumonia													4							1	8	1	1				1		2	1		
96. Congestion and apoplexy of the lungs																					1							1	1	1		
97. Asthma					1																1	1								2		
99. Other diseases of the respiratory system (phthisis excepted)													1								1											
V. Diseases of the digestive system.																																
101. Diseases of the pharynx						1																								1		
103. Ulcer of the stomach																					1	1										
104. Other diseases of the stomach (cancer excepted)																														1		
106. Diarrhea and enteritis (2 years and over)						1							5	1					1		2							1		8		
108. Hernias and intestinal obstructions					1								2								1								2	1		
112. Cirrhosis of the liver																						1										
114. Other diseases of the liver						1							1				1				1						3		2	1		
116. Simple peritonitis (nonpuerperal)													1									1							1	1		
118. Appendicitis and abscess of the iliac fossa					1								3	1							2											
VI. Diseases of the genito-urinary system and its adnexa.																																
119. Acute nephritis					1	1							3	2	1						2	1							1	1		
120. Bright's disease					1	1							3	3							3	2								3		
121. Other diseases of the kidneys and their adnexa														1																		
122. Calculi of the urinary tract					1																	1								1		
127. Metritis																														1		
128. Uterine hemorrhage (nonpuerperal)																																
131. Cysts and other tumors of the ovary														1																		

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 10 to 15 years.								From 15 to 20 years.								From 20 to 25 years.								From 25 to 30 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
VII. The puerperal state.																																
134. Accidents of pregnancy																						1										
135. Puerperal hemorrhage														4								7								9		
136. Other accidents of labor																						1										
137. Puerperal septicæmia														4								8								11		
138. Puerperal albuminuria and convulsions														3								2								2		
VIII. Diseases of the skin and cellular tissue.																																
142. Gangrene																					2											
IX. Diseases of the organs of locomotion.																																
146. Nontuberculous diseases of the bones													1																			
XIII. External causes.																																
155. Suicide by poison																											1					
159. Suicide by firearms																													1			
164. Fractures														1							1								1			
166. Other accidental traumatisms					1								4								5	1					1		3	2	2	
167. Burns and scalds						2																										
172. Accidental drowning					2	1							3								2									1	2	
174. Absorption of deleterious gases (nonsuicidal)																													1			
176. Other external violence													2								4								8			
XIV. Ill-defined diseases.																																
177. Dropsy					1																											
179. Causes of death unspecified or ill defined					1								3								3							1	3			
Total					62	45	5				1	1	175	111	4		2		5	1	206	175	8	1	2		17	4	208	195	38	2
Grand total					107		5				2		286		4		2		6		381		9		2		21		403		40	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 30 to 35 years.								From 35 to 40 years.								From 40 to 45 years.								From 45 to 50 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
I. General diseases.																																
1. Typhoid fever (abdominal typhus)			1		3	1							1	3								1							1			
4. Intermittent fever and malarial cachexia	1		1		6	2	15						8	1	13						10	2	9						5	3	4	
4a. Malarial cachexia					2								1	1																		
5. Smallpox	2												1	2							1											
10. Influenza						2	1							1	2							1							1		2	
12. Asiatic cholera			1		17	13	5						16	20	4					1	13	4							7	6	8	
14. Dysentery					6	2	3		1		3		7	4	4						3	1	8						7	3	2	
17. Leprosy					6	3							3								1	1										
18. Erysipelas													1								1											
19. Other epidemic diseases (beri-beri)					8	5	6	1					1	8	13						6	4	8		1				1	3	2	
20. Purulent infection and septicæmia					2		2		1				1		1														1	2	1	
26. Tuberculosis of the larynx					1	1							1									2							1			
27. Tuberculosis of the lungs			3	1	58	49	15						75	41	16						36	39	15		1		1		43	27	11	
28. Tuberculosis of the meninges											1			1																		
29. Abdominal tuberculosis			1		3	1							1	1								3							2			
33. Tuberculosis of other organs						1																1							1			
34. General tuberculosis	1												4	1							3		1									
36. Syphilis							2								2				1		1										2	
39. Cancer and other malignant tumors of the buccal cavity																														1		
40. Cancer and other malignant tumors of the stomach and liver													1		1						1						1				1	
41. Cancer and other malignant tumors of the peritoneum, intestines, and rectum																														1		
42. Cancer and other malignant tumors of the female genital organs						4								2								1								2		
43. Cancer and other malignant tumors of the breast																														1		
44. Cancer and other malignant tumors of the skin														1								2										
45. Cancer and other malignant tumors of other organs or of organs not specified					2								1	1					1										1			
47. Acute articular rheumatism													1																			
48. Chronic rheumatism and gout						1							2								2								4	2		
49. Scurvy					1																											
50. Diabetes																									1						1	
54. Anæmia, chlorosis						1								1	1							1								2		
56. Acute and chronic rheumatism					1				1												1											
59. Other chronic poisonings							1																									

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 30 to 35 years.								From 35 to 40 years.								From 40 to 45 years.								From 45 to 50 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
II. Diseases of the nervous system and of the organs of special sense.																																
60. Encephalitis						1						1																				
61. Simple meningitis						1							1																	1		
62. Progressive locomotor ataxia																							1									
63. Other diseases of the spinal cord					1								1																1	1		
64. Congestion and hemorrhage of the brain					2	2							2	3	1				1		5	3			1				4	1	1	
65. Softening of the brain							1								1								2								1	
66. Paralysis without specified cause					1																		1									
67. General paralysis					1																											
68. Other forms of mental alienation					1								3	1	1														3			
69. Epilepsy													1		1																1	
72. Tetanus														1								1							2			
74. Other diseases of the nervous system						1			1								1												1		1	
III. Diseases of the circulatory system.																																
77. Pericarditis													2																			
78. Acute endocarditis						2							1								1	1								1		
79. Organic diseases of the heart	1			1	5	1			1				6	4	6						1		2				1		6	2	2	
80. Angina pectoris					2	4							1	2							4	1							1	2		
81. Diseases of the arteries, atheroma, aneurism, etc																	1														1	
82. Embolism and thrombosis			1																											1		
85. Hemorrhages						1									1																	
IV. Diseases of the respiratory system.																																
90. Acute bronchitis							1								2																	
91. Chronic bronchitis					1	3							2	6								2							6	7	4	
92. Broncho-pneumonia	1				1									1							1											
93. Pneumonia					5				1				2								4								1			
94. Pleurisy						1					1																					
95. Congestion and apoplexy of the lungs					1									1																		
96. Gangrene of the lungs														1																		
97. Asthma							1						2								3	1							1	1	1	
98. Pulmonary emphysema						1																										
99. Other diseases of the respiratory system (phthisis excepted)						1															1									1		

V. Diseases of the digestive system.																																
101. Diseases of the pharynx																				1												
103. Ulcer of the stomach					1	1								1							1											
104. Other diseases of the stomach (cancer excepted)							1								1														1			
106. Diarrhea and enteritis (2 years and over)					4	4							2	5							2	2									1	
108. Hernia and intestinal obstructions							2						1		1						1		1						1		1	
110. Acute yellow atrophy of the liver			1																													
112. Cirrhosis of the liver					1									1							2	1							1			
113. Biliary calculi													1	1							1											
114. Other diseases of the liver	3										1		3						1								1		2			
116. Simple peritonitis (nonpuerperal)																					2	1										
118. Appendicitis and abscess of the iliac fossa					1																									1		
VI. Diseases of the genito-urinary system and its adnexa.																																
119. Acute nephritis					1	1								1							1	1										
120. Bright's disease	1	1			1	1							1	4	2						3	2							2	1	1	
121. Other diseases of the kidneys and their adnexa					1																											
122. Calculi of the urinary tract													1																			
123. Diseases of the bladder																					1	1							2	1		
127. Metritis														1																2		
128. Uterine hemorrhage (nonpuerperal)						1																										
131. Cysts and other tumors of the ovary						1																										
VII. The puerperal state.																																
134. Accidents of pregnancy														1								1								1		
135. Puerperal hemorrhage						9								2								1										
136. Other accidents of labor						1								1																		
137. Puerperal septicæmia				1		10								2																		
138. Puerperal albuminuria and convulsions						1								2																		
VIII. Diseases of the skin and cellular tissue.																																
143. Furuncle													1																1	1		
XIII. External causes.																																
164. Fractures																					1								2			
166. Other accidental traumatisms					1		1						2		2		2						2						1		2	
167. Burns and scalds													1	2																		
172. Accidental drowning							2						1		1														2			
174. Absorption of deleterious gases (nonsuicidal)						1																										
175. Other acute poisonings			1			1																										
176. Other external violence					2								4								1								1			
XIV. Ill-defined diseases.																																
177. Dropsy														1																		
179. Causes of death unspecified or ill defined						2							2	1	1						1	2	2									
Total	10	1	10	3	150	139	59	1	6		6	1	169	135	78		4		4	1	118	84	47		4		4		119	78	46	
Grand total	11		13		289		60		6		7		304		78		4		5		202		47		4		4		197		46	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 50 upward.								Unknown.								Total.								Grand total.
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
I. General diseases.																									
1. Typhoid fever (abdominal typhus)					2														2	1	54	27			84
4. Intermittent fever and malarial cachexia					9	2	2										1		1		85	35	53		175
4a. Malarial cachexia					1	2															7	9			16
5. Smallpox	1																3				34	37	2		76
6. Measles																					3	2			5
7. Scarlet fever																					1				1
8. Whooping cough																					4	5			9
9. Diphtheria and croup					1																2	7			9
9a. Diphtheria																	1								1
10. Influenza					2	2											1				6	13	8		28
12. Asiatic cholera			1		11	17											1	1	7	2	194	143	17		365
14. Dysentery	1		1		18	11											3		12		182	156	18		371
17. Leprosy					2	1															24	15			39
18. Erysipelas																					4	1			5
19. Other epidemic diseases (beri-beri)					19	15	3						1	1			1		3		242	230	37	1	514
20. Purulent infection and septicæmia					2	3								1			1				12	10	5		28
22. Malignant pustule					1																2	1			3
26. Tuberculosis of the larynx						2															8	5			13
27. Tuberculosis of the lungs			2		100	85	9						1				1		9	1	546	•441	77	1	1,076
28. Tuberculosis of the meninges																		1	1		15	19	1		37
29. Abdominal tuberculosis					1	1													1		20	22			43
30. Pott's disease						1															1	2			3
33. Tuberculosis of other organs						1															2	4			6
34. General tuberculosis					4	2		1									1				23	17	1	1	43
35. Scrofula																					1				1
36. Syphilis																			1		6	2	6		15
39. Cancer and other malignant tumors of the buccal cavity					.6	8															6	9			15
40. Cancer and other malignant tumors of the stomach and liver						2													1		5	2	2		10
41. Cancer and other malignant tumors of peritoneum, intestines, and rectum					1																2	1			3
42. Cancer and other malignant tumors of the female genital organs						2																13			13
43. Cancer and other malignant tumors of the breast						4																5			5
44. Cancer and other malignant tumors of the skin						3																6			6

45. Cancer and other malignant tumors of other organs or of organs not specified			3		7	3													4		12	4	1		21
47. Acute articular rheumatism						2															2	5			7
48. Chronic rheumatism and gout					19	7															28	11			39
49. Scurvy																					2	2			4
50. Diabetes						1											1				1	1	1		4
51. Exophthalmic goiter					1																1	1			2
52. Addison's disease	1																1								1
53. Leukæmia																						1			1
54. Anæmia, chlorosis			1		1	3													1		2	15	1	1	20
55. Other general diseases					1																1				1
56. Acute and chronic alcoholism																	1				2				3
59. Other chronic poisonings							1																3		3
II. Diseases of the nervous system and of the organs of special sense.																									
60. Encephalitis						1														1		2			3
61. Simple meningitis					3														7	1	262	269	1		540
62. Progressive locomotor ataxia					1																1		1		2
63. Other diseases of the spinal cord					1	1															4	3			7
64. Congestion and hemorrhage of the brain	1		1		32	34	1							1			2		2		55	48	4		111
65. Softening of the brain			1		1	1													1		1	1	6		9
66. Paralysis without specified cause					2		2														4		3		7
67. General paralysis					3	2	1														4	3	1		8
68. Other forms of mental alienation																					9	2	1		12
69. Epilepsy					1																3	1	2		6
71. Convulsions (under 5 years)																	1				955	793	3	6	1,758
72. Tetanus					1	2	1												1		72	71	1		145
74. Other diseases of the nervous system																	3				4	1	1		9
III. Diseases of the circulatory system.																									
77. Pericarditis																					3	1			4
78. Acute endocarditis					2	1							1								6	11			17
79. Organic diseases of the heart	2		2	1	16	14	2						1				4		3	3	48	31	13	1	103
80. Angina pectoris					13	8															26	23			49
81. Diseases of the arteries, atheroma, aneurism, etc	1				10	9											3				11	9	1		24
82. Embolism and thrombosis																			1			2			3
85. Hemorrhages																					2	3	1		6
IV. Diseases of the respiratory system.																									
88. Diseases of the larynx																					3	2			5
90. Acute bronchitis					2	3															372	304	7	1	684
91. Chronic bronchitis					35	34	16										1				196	191	20		408
92. Broncho-pneumonia					6	2	1										1				32	25	1		59
93. Pneumonia					2	2											2		1	1	33	9	1		47
94. Pleurisy					2	1													1		2	2			5
95. Congestion and apoplexy of the lungs						1														1	13	7			21
96. Gangrene of the lungs																						1			1
97. Asthma			1		5	7	1												1		13	14	3		31

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 50 upward.								Unknown.								Total.								Grand total.
	Americans.		Foreigners.		Filipinos.-		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Fillipinos.		Chinese.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
IV. Diseases of the digestive system—Continued.																									
98. Pulmonary emphysema			1		1														1		1	1			3
99. Other diseases of the respiratory system (phthisis excepted)						1															3	4			7
V. Diseases of the digestive system.																									
100. Diseases of the mouth and its adnexa																					1				1
101. Diseases of the pharynx																					2	6			8
103. Ulcer of the stomach					1	1															4	4			8
104. Other diseases of the stomach (cancer excepted)			1		7	1													1	1	12	10	2		26
105. Diarrhea and enteritis (under 2 years)																		2	1	3	142	133	4	1	286
105a. Chronic diarrhea and enteritis (under 2 years)																					107	94	1	1	203
106. Diarrhea and enteritis (2 years and over)					9	12											2		1	1	148	122	1		275
107. Intestinal parasites																						2			2
108. Hernia and intestinal obstructions					3	5	1										1				20	7	6		34
109. Other diseases of the intestines													1								1				1
110. Acute yellow atrophy of the liver																			1						1
112. Cirrhosis of the liver					3	3															7	6			13
113. Biliary calculi					2																4	1			5
114. Other diseases of the liver					3	2											4		6		14	4			28
115. Diseases of the spleen					1																1				1
116. Simple peritonitis (nonpuerperal)					2																10	3			13
118. Appendicitis and abscess of the iliac fossæ					1																8	2			10
VI. Diseases of the genito-urinary system and its adnexa.																									
119. Acute nephritis	1				2	1											1	1			19	14	1		36
120. Bright's disease			1		27	29											1	1	1		49	52	3		107
121. Other diseases of the kidneys and their adnexa																					1	1			2
122. Calculi of the urinary tract																					2				2
123. Diseases of the bladder					2																5	2			7
127. Metritis						1																6			6
128. Uterine hemorrhage (nonpuerperal)																						2			2
130. Other diseases of the uterus						1																1			1
131. Cysts and other tumors of the ovary																						2			2
VII. The puerperal state.																									
134. Accidents of pregnancy																						4			4
135. Puerperal hemorrhage																						32			32
136. Other accidents of labor																						3			3

137. Puerperal septicæmia																				1		35			36
138. Puerperal albuminuria and convulsions																						10			10
VIII. Diseases of the skin and cellular tissue.																									
142. Gangrene					1																4	1			5
143. Furuncle					1		1														4	1	1		6
144. Acute abscess, phlegmon																					2				2
145. Other diseases of the skin and its adnexa																	1								1
IX. Diseases of the organs of locomotion.																									
146. Nontuberculous diseases of the bones																					7	8			15
X. Malformations.																									
150. Congenital malformations (stillbirths excepted)													1						1		7				8
XI. Early infancy.																									
151. Congenital debility, icterus, and sclerema																	6	2	1	3	287	202		1	502
152. Other diseases peculiar to early infancy																					18	12			30
153. Lack of care																					19	25			44
XII. Old age.																									
154. Senile debility					55	126															55	126			181
XIII. External causes.																									
155. Suicide by poison																			1						1
159. Suicide by firearms																					1				1
161. Suicide by jumping from high place											1								1						1
164. Fractures							1						1								7	1	1		9
165. Dislocations					1																1				1
166. Other accidental traumatisms					3	1							2				2		1		23	6	9		41
167. Burns and scalds																					3	7			10
172. Accidental drowning					2												1				15	6	5		27
173. Inanition (starvation)																	2				4	4			10
174. Absorption of deleterious gases (nonsuicidal)																					1	1			2
175. Other acute poisonings																			1			1			2
176. Other external violence					2																24				24
XIV. Ill-defined diseases.																									
177. Dropsy																					1	1			2
179. Causes of death unspecified or ill-defined	1				2	2							4				1			1	28	10	3		48
Total	**9**		**16**	**1**	**478**	**489**	**43**	**1**			**1**		**13**	**3**			**56**	**8**	**79**	**21**	**4,748**	**4,083**	**341**	**15**	**9,351**
Grand total	**9**		**17**		**967**		**44**				**1**		**16**				**64**		**100**		**8,831**		**356**		**9,351**

Deaths, by occupations.

Occupation.	Number. Male.	Number. Female.
Professional:		
Architects, artists, teachers of art, etc	5	1
Clergymen, priests, nuns, etc	9	4
Engineers and surveyors	4	------
Journalists	1	------
Lawyers	2	------
Musicians and teachers of music	10	------
Nurses and midwives	1	4
Physicians and surgeons	3	------
Teachers (schools)	4	4
Others of this class	8	------
Clerical and official:		
Bookkeepers, clerks, and copyists	116	------
Bankers, brokers, and officials of companies	10	------
Collectors, auctioneers, and agents	3	------
Telegraph and telephone operators	3	------
Others of this class	3	------
Mercantile and trading:		
Apothecaries, pharmacists, etc	6	1
Commercial travelers	1	3
Merchants and dealers	66	3
Hucksters and peddlers	2	------
Shopkeepers	16	69
Others of this class	2	------
Personal service, police and military:		
Barbers and hairdressers	12	1
Janitors and sextons	6	1
Policemen, watchmen, and detectives	8	------
Soldiers, sailors, and marines	10	------
Others of this class	9	------
Laboring and servant:		
Laborers (not agricultural)	693	20
Launderers	17	174
Servants	71	28
Manufacturing and mechanical industry:		
Bakers and confectioners	7	1
Blacksmiths	13	------
Boot, shoe, and slipper makers	13	------
Brewers, distillers and rectifiers	1	------
Butchers	3	2
Manufacturing and mechanical industry—Continued.		
Carpenters and joiners	99	------
Cigar makers and tobacco workers	26	78
Clock and watch repairers, jewelers, etc	26	6
Compositors, printers, etc	16	1
Embroiderers (gold, silk, etc.)	2	11
Engineers and firemen (not locomotive)	29	------
Leather workers	9	------
Machinists	11	------
Masons (brick and stone)	5	------
Mill and factory operatives (textiles)	------	2
Millers (flour and grist)	1	------
Milliners	------	2
Painters, glaziers, and varnishers	25	------
Tailors, dressmakers, and seamsters	44	186
Tinners and tinware makers	2	------
Others of this class	36	3
Agriculture, transportation, and other outdoor:		
Boatmen and canalmen	26	------
Draymen, drivers, and teamsters	65	------
Farmers, planters, and farm laborers	48	5
Gardeners, florists, nurserymen, etc	2	1
Livery-stable keepers and hostlers	2	------
Lumbermen and raftsmen	2	------
Miners and quarrymen	4	------
Sailors, pilots, fishermen, and oystermen	81	2
Steam-railroad employees	1	------
Stock raisers, herders and drovers	1	------
Others of this class	5	------
All other occupations:	86	24
Total	1,792	637
Grand total	2,429	

Report of sick and wounded poor attended by municipal physicians.

Health districts and physicians.	Americans. Adults, male.	Americans. Children, male.	Foreigners. Adults. Male.	Foreigners. Adults. Female.	Filipinos. Adults. Male.	Filipinos. Adults. Female.	Filipinos. Children. Male.	Filipinos. Children. Female.
No. 1, Intramuros, Dr. V. Cavanna	9	1	38	8	1,017	1,204	464	344
No. 2, Meisic, Drs. F. Herrera and C. Reyes	33	------	10	------	535	333	210	146
No. 4, Sampaloc, Dr. F. Castañeda	------	------	1	------	481	882	645	608
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	1	------	------	------	632	316	162	122
No. 6, Paco, Dr. J. B. Cabarrus	------	------	------	------	280	268	202	185
Dr. Tee Han Kee:								
Station A, Meisic	1	------	------	------	31	13	1	7
Bureau of Education	------	------	------	------	66	3	------	------
Bureau of Customs	------	------	------	------	445	------	------	------
Bureau of Posts	------	------	------	------	282	------	------	------
Dr. P. Gabriel:								
Bureau of Printing	------	------	------	------	242	------	------	------
Bureau of Audits	------	------	------	------	114	------	------	------
Total	44	1	49	8	4,125	3,019	1,684	1,412

Report of sick and wounded poor attended by municipal physicians—**Continued.**

Health districts and physicians.	Chinese.		Total.	Cured.		Deaths.		Number of visits.
	Adults, male.	Children, male.		Male.	Female.	Male.	Female.	
No. 1, Intramuros, Dr. V. Cavanna			3,085	896	894	41	46	10,078
No. 2, Meisic, Drs. F. Herrera and C. Reyes	43		1,310	569	336	20	17	4,979
No. 4, Sampaloc, Dr. F. Castañeda	1		2,618	221	250	64	62	3,479
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	19		1,252	269	179	46	39	5,498
No. 6, Paco, Dr. J. B. Cabarrus	1		936	253	240	36	40	2,506
Dr. Tee Han Kee:								
Station A, Meisic	327	6	386	217	10	8		2,251
Bureau of Education			69	19				377
Bureau of Customs			445	96				4,187
Bureau of Posts			282	67				2,601
Dr. P. Gabriel:								
Bureau of Printing	1		243	53				4,014
Bureau of Audits			114	23				1,981
Total	392	6	10,740	2,678	1,909	210	204	41,896

Report of prescriptions filled at the municipal dispensary.

Health Districts.	Americans.				Foreigners, adults.		Filipinos.				Chinese.		Total.
	Adults.		Children.				Adults.		Children.		Adults, male.	Children, female.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.			
No. 1, Intramuros	1,500	483		2	61	4	4,142	3,553	1,076	698	15	1	11,530
No. 2, Meisic	36				48		1,912	967	437	307	14		3,721
No. 4, Sampaloc	12	3	2		8		2,015	1,301	1,514	739	4		5,598
No. 5, Tondo	31	1					1,421	970	278	274			2,975
No. 6, Paco	272	50					1,020	627	486	469	2		2,926
Total	1,851	537	2	2	117	4	10,510	7,418	3,791	2,482	35	1	26,750

Permits issued for the disposition of dead bodies.

Disposition.	Number.	Disposition.	Number.
Buried.		Buried—Continued.	
Norte Cemetery	5,623	San Pedro Macati Cemetery	10
Paco Cemetery (3 fœtuses)	297	Otherwise disposed of:	
Santa Cruz Cemetery	98	Embalmed for shipment to United States	18
Binondo Cemetery	324	Cremated	22
Balicbalic Cemetery	1,392	Transferred to provinces	26
Maytubig Cemetery	285	Preserved in alcohol (fœtuses)	8
Malate Cemetery (1 fœtus)	543	Remaining in Malecon Morgue	12
Pandacan Cemetery, Roman Catholic	72		
Pandacan Cemetery, Filipino Church	207	Total	9,709
Santa Ana Cemetery	377		
Chinese Cemetery	405		

NOTE.—This total includes 21 dead bodies brought from the provinces, 2 remains unearthed, and 335 fœtuses. The 4 fœtuses appearing in parenthesis were buried together with their mothers.

Disinterments.

Cemetery.	Number.	Cemetery.	Number
Paco	154	Tondo	27
Norte	11	Pandacan, Roman Catholic	1
Loma	5	Santa Ana	8
Santa Cruz	59	Sampaloc	2
Binondo	36	Maytubig	1
Balicbalic	16		
Malate	18	Total	418
Chinese	80		

General inspection of houses, premises, vaults, etc., with improvements ordered, disinfected, whitewashed, cleaned, etc., by medical inspectors, sanitary inspectors, and assistant sanitary inspectors.

1.	Inspections of houses by the sanitay inspectors	33,441
2.	Reinspections of houses for verification of work ordered	3,659
3.	Inspections of houses by assistant sanitary inspectors and sanitary policemen	279,449
4.	Reinspections of houses by assistant sanitary inspectors and sanitary policemen	78,233
5.	Houses ordered cleaned (written)	740
6.	Houses ordered cleaned (verbal)	50,126
7.	Houses cleaned	60,759
8.	Houses ordered whitewashed and painted	887
9.	Houses whitewashed and painted	114
10.	Number of houses disinfected	6
11.	Number of houses recommended condemned and removed	7
12.	Number of houses condemned and removed	6
13.	Number of localities where "squatters" are located	0
14.	Number of samples of water, foods, etc., sent to laboratory	1,132
15.	Number of reports for same	808
16.	Number of fire plugs opened or closed for sanitary purposes	0
17.	Number of hydrants recommended reopened	0
18.	Number of houses where garbage has not been removed for 2 days	885
19.	Number of persons reported sick to municipal physician	6,883
20.	Cesspools and vaults ordered cleaned	2,606
21.	Cesspools cleaned	1,829
22.	Yards ordered cleaned	25,807
23.	Yards cleaned	25,404
24.	Yards ordered repaired (repaved, etc.)	1
25.	Yards repaired	1
26.	Number of cholera cases reported by sanitary inspectors	71
27.	Number of cholera cases found alive	191
28.	Number of cholera cases found dead	234
29.	Number of orders issued during the fiscal year	437
30.	Number of orders complied with during the fiscal year	203
31.	Number of orders awaiting action	1,261
32.	Number of orders pending in court	9
33.	Average number of food tiendas in the districts	2,743
34.	Number of persons convicted for violation of food prohibition orders	685
35.	Average number of regular inspectors on duty	12
36.	Average number of regular emergency inspectors on duty	10
37.	Number of leprosy cases sent to Culion leper colony	20
38.	Number of plague cases reported	0
39.	Number of smallpox cases reported	181
40.	Average number of houses in which traps are set	905
41.	Average number of houses in which bane is placed	21
42.	Average number of traps set	829
43.	Average number of plates with ratsbane placed	18
44.	Rats caught by rat catchers	36
45.	Rats caught by traps	778
46.	Rats caught by poison	14
47.	Rats purchased	10
48.	Average number of rats catchers employed	0
49.	Number of persons vaccinated during the year	27,415

Report of disinfections.

Causes for disinfections.	Number of disinfections.	Number of contacts.	Causes for disinfections.	Number of disinfections.	Number of contacts.
Abscess of the neck	2	------	Pneumonia	1	------
Acute gastro-enteritis	1	------	Rinderpest	64	------
Acute laryngitis	1	------	Scarlet fever	1	4
Amœbic dysentery	1	------	Septicemia	1	------
Anthrax	6	4	Smallpox	184	1,275
Beri-beri	80	------	Suspected cholera	159	822
Cancer	1	------	Suspected measles	1	------
Cholera	604	3,494	Suspected smallpox	3	17
Cholera infantile	1	2	Suspected typhoid fever	4	10
Diphtheria	14	57	Syphilis	1	------
Dysentery	4	3	Tetanus	1	5
Erysipelas	3	12	Tuberculosis	344	------
Exhumations	418	------	Typhoid fever	28	88
Glanders	13	------	Undetermined	4	30
Grippe	5	------	Varicella	23	132
Foot-and-mouth disease	34	7	Varioloid	12	51
Insanitary condition	4,385	63	Vermin	1	------
Leprosy	19	47	Others	3	------
Malignant pustule	1	15			
Measles	52	58	Total	6,482	6,196
Mosquito larvæ	2	------			

Report of operations of the pail-conservancy system.

PAIL COLLECTIONS.

Where cleaned.	Number of installations.	Number of installations in use.	Pails in use.	Pails cleaned.
Private houses	3,811	1,626	1,999	641,637
Public buildings	114	50	301	61,929
Midden sheds	82	76	1,613	413,562
Military buildings	26	8	39	19,210
Mariquina	136	125	150	54,770
Total	4,169	1,885	4,102	1,191,108

VAULTS CLEANED.

Where cleaned.	Cleaned by odorless excavators.		
	Vaults cleaned.	Loads removed.	Gallons removed.
Private houses	1,863	2,876	1,438,000
Public buildings	102	1,867	683,500
Military buildings	17	136	68,000
Total	1,982	4,879	2,189,500

Report of crematories.

Disposition.	Crematories.		Total.
	Palomar.	Paco.	
Animals cremated:			
American horses	218	4	222
American mules	61	------	61
Australian horses	41	------	41
Chinese horses	30	------	30
Chinese mules	8	------	8
Native ponies	434	8	442
Carabaos	817	22	839
Cows	777	34	811
Calves	187	------	137
Dogs	2,111	75	2,186
Goats	63	2	65
Cats	199	------	199
Sheep	9	------	9
Monkeys	30	------	30
Fowls	2,504	------	2,504
Pigs	1,693	37	1,730
Domestic birds	61	------	61

Disposition.	Crematories.		Total
	Palomar.	Paco.	
Animals cremated—Cont'd.			
Deer	81	1	82
Rats	121	------	121
Steers	8	------	8
Total	8,843	183	9,026
Loads cremated:			
Garbage	582	4	586
Trade refuse	516	12	528
Organic matter	1,019	99	1,118
Market refuse	223	13	236
Beach refuse	241	------	241
Slops	1,589	23	1,612
Condemned goods	455	30	485
Total	4,625	181	4,806

Report of Malecon Morgue.

Disposition of dead bodies.	Number.
Buried by family	26
Buried by city	348
Transferred to San Lazaro Morgue	5
Remaining in morgue	12
Total	391

Report of action taken on applications for licenses.

Kind of license applied for.	Approved.	Disapproved.	Total acted upon.	Kind of license applied for.	Approved.	Disapproved.	Total acted upon.
Liquor:							
First-class bars	58	------	58	Laundries	13	1	14
Second-class bars	67	2	69	Tattooers	7	------	7
First-class bars and restaurants	30	1	31	Dance halls	20	2	22
Second-class bars and restaurants	22	------	22	Theaters	14	------	14
Wholesale	32	------	32	Billiard and pool tables	139	3	142
Groceries	76	------	76	Pawnbrokers, junk shops, and second-hand goods	38	3	41
Theaters	1	------	1	Ferryboats	3	------	3
Druggists	3	------	3	Carrillos	13	------	13
Hotels	22	------	22	Candies, sweetmeats, cakes, etc	5	------	5
Restaurants	584	80	664	Cinematographs	3	------	3
Boarding houses	15	2	17	Ice cream	4	7	11
Lodging houses	11	------	11	Slot machines	3	------	3
Distilleries	4	------	4	Dyeing and cleaning cloths	14	------	14
Native wines	2,258	35	2,293	Whole stock yard	1	------	1
Breweries	1	------	1	Shooting gallery	1	------	1
Auctioneers	4	------	4	To sell sugar cane	------	1	1
Clubs	28	------	28	Bill posting and street advertising agency	3	------	3
Cooked foods, fruits, vegetables, and soft drinks	2,105	85	2,190	Foundry	5	------	5
Bakeries	4	------	4	Public warehouse	1	------	1
Manufactures	159	18	177	Three additional vehicles	1	------	1
Livery stables	12	------	12				
Barber shops	280	5	285	Total	6,054	245	6,309

Report of medical inspection of schools as prepared by Dr. Anna D. Peck, medical inspector.

	Boys.	Girls	Total	Percentage.
Total inspected	5,459	1,860	7,319	-------
Defective vision:				
Myopia	1,716	652	2,368	32
Astigmatism	2,618	831	3,449	47
Strabismus	8	1	9	-------
Amblyopia	8	-------	8	-------
Corneal defects	7	-------	7	-------
Diseased lids	906	296	1,202	17
Other eye affections—				
Occlusion of lachrymal duct	-------	1	1	-------
Sarcoma of cornea	2	-------	2	-------
Defective hearing	426	90	516	7
Dental caries	1,946	1,131	3,077	42
Excessive adenoid tissue tonsils, pharynx, and nostrils	1,075	483	1,558	21
Anemia	507	196	703	10
Dermatoses:				
Acne	311	55	366	5
Pinta	67	31	98	1
Tinea imbricata	392	86	478	6
Tinea circinata	22	6	28	6
Tinea tonsurans	1	-------	1	-------
Eczema	5	2	7	-------
Smallpox pitted	1,104	314	1,418	20
Deformities:				
Talipes varus	-------	1	1	-------
Scoliosis	2	-------	2	-------
Absence of limb	2	-------	2	-------
Harelip and cleft palate	3	1	4	-------
Gingivitis	1	-------	1	-------
Cervical tumor	1	-------	1	-------
Otitis media	1	-------	1	-------
Chronic ulcers	1	2	3	-------
Lame from birth	1	-------	1	-------

Reports received of lepers living in the various provinces in the Philippine Islands.

Province.	Race.	Number of— Male.	Number of— Female.	Children. Male.	Children. Female.	Single. Male.	Single. Female.	Married. Male.	Married. Female.	Widowers.	Widows.	Total.
Abra	Filipino	3	2	------	------	2	1	1	1	------	------	5
Albay	do	2	3	------	------	2	2	------	1	------	------	5
Bataan	do	16	8	1	------	9	2	4	3	2	3	24
Batangas	do	------	------	------	------	------	------	------	------	------	------	5
Benguet[1]	do	------	------	------	------	------	------	------	------	------	------	6
Bulacan	do	30	17	------	1	17	9	10	5	3	2	47
Cagayan	do	39	41	1	------	13	15	21	13	4	13	80
Cavite	do	51	28	3	2	28	19	18	5	2	2	79
Cebu	do	------	------	------	------	------	------	------	------	------	------	50
Culion	(2)	840	493	151	71	391	238	256	139	42	45	1,333
Ilocos Norte	Filipino	------	------	------	------	------	------	------	------	------	------	128
Ilocos Sur	do	------	------	------	------	------	------	------	------	------	------	7
Iloilo	do	7	5	1	------	4	2	2	2	------	1	12
Isabela	do	8	2	------	------	2	------	6	2	------	------	10
La Laguna	do	30	18	------	5	16	8	11	3	3	2	48
Lepanto-Bontoc	do	16	13	------	------	11	9	4	4	1	------	29
Misamis[1]	do	43	21	4	------	20	13	17	6	2	2	64
Nueva Ecija[1]	do	32	15	1	------	11	4	16	8	4	3	47
Occidental Negros	do	1	1	------	------	1	1	------	------	------	------	2
Oriental Negros	do	1	------	------	------	1	------	------	------	------	------	1
Pampanga	do	16	7	2	1	5	2	6	3	3	1	23
Pangasinan	do	44	27	1	1	11	6	21	14	11	6	71
Rizal	do	41	25	4	3	23	7	14	15	------	------	66
Tarlac	do	24	14	------	1	4	5	18	8	2	------	38
Tayabas	do	16	4	2	------	7	2	7	2	------	------	20
Union	do	35	14	------	------	10	7	19	5	6	2	49
Zambales	do	21	26	------	------	2	6	14	11	5	9	47
San Lazaro Hospital	(3)	117	75	15	10	58	31	35	20	9	14	192
Total		1,433	859	186	95	648	389	500	270	99	105	2,488

[1] Revised report not received.
[2] Filipinos, 1,330; Chinese, 2; Europeans, 1; total, 1,333.
[3] Filipinos, 190; Chinese, 2; total, 192.

Reports received of insane persons living in the various provinces of the Philippine Islands.

Provinces.	Race.	Number of— Male.	Number of— Female.	Children. Male.	Children. Female.	Single. Male.	Single. Female.	Married. Male.	Married. Female.	Widowers.	Widows.	Total.
Abra	Filipino	16	7	------	------	14	3	2	1	------	3	23
Albay	do	30	50	1	------	20	29	7	14	2	7	80
Ambos Camarines	do	41	45	------	1	29	31	10	9	2	4	86
Antique	do	30	35	------	------	21	19	8	12	1	4	65
Bataan	do	16	11	------	------	7	4	8	1	1	6	27
Batangas	do	59	47	1	------	42	32	13	6	3	9	106
Bohol	do	279	280	11	7	209	212	50	45	9	16	559
Bulacan	do	37	24	------	------	21	13	12	6	4	5	61
Cagayan	do	17	15	------	------	12	8	3	4	2	3	32
Capiz	do	65	68	------	1	44	30	14	18	7	19	133
Cavite	do	38	33	------	------	22	21	11	7	5	5	71
Cebu	do	177	109	23	16	128	75	24	9	2	9	286
Ilocos Norte	do	70	28	------	------	54	16	12	9	4	3	98
Ilocos Sur	do	88	49	1	------	63	32	18	14	6	3	137
Iloilo	do	85	68	1	------	64	40	14	15	6	13	153
Isabela	do	9	6	------	------	4	1	5	5	------	------	15
La Laguna	do	43	41	------	------	26	20	13	8	4	13	84
Lepanto-Bontoc	do	2	3	------	------	2	2	------	1	------	------	5
Leyte[1]	do	34	17	3	------	27	13	3	4	1	------	51
Masbate[1]	do	7	6	1	1	5	5	1	------	------	------	13
Mindoro[1]	do	9	7	------	------	8	4	1	2	------	1	16
Misamis	do	69	64	4	------	46	35	14	17	5	12	133
Nueva Ecija[1]	do	22	23	------	1	18	13	3	7	1	2	45
Nueva Vizcaya[1]	do	4	5	------	------	4	1	------	3	------	1	9

[1] Revised report not received.

Reports received of insane persons living in the various provinces of the Philippine Islands—Continued.

Provinces.	Race.	Number of—		Children.		Single.		Married.		Widowers.	Widows.	Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.			
Occidental Negros	Filipino	60	37			42	19	15	11	3	7	97
Oriental Negros	do	64	47			49	38	11	4	4	5	111
Pampanga	do	40	31			28	15	12	8		8	71
Pangasinan	do	98	83	2		53	39	30	31	13	13	181
Rizal	do	39	22			29	16	5	3	5	3	61
Romblon	do	4				2		2				4
Samar[1]	do	32	28			24	19	4	4	4	5	60
Sorsogon	do	90	70	2	2	67	50	20	9	1	9	160
Surigao[1]	do	9	10			5	6	2	2	2	2	19
Tarlac	do	9	8			4	5	5	2		1	17
Tayabas	do	120	105	5	3	88	72	23	18	4	12	225
Union	do	42	32	2	5	18	15	17	11	5	1	74
Zambales	do	8	9			7	3	1	3		3	17
Hospicio de San Jose[2]	do	62	67									129
San Lazaro Hospital	(3)	105	20			69	11	27	7	9	2	125
Total		2,029	1,610	57	37	1,375	967	420	330	115	209	3,639

[1] Revised report not received.
[2] Supported by the Government.
[3] American, 1; Europeans, 2; Filipinos, 117; Chinese, 3; others, 2; total, 125.

Reports received of blind persons living in the various provinces of the Philippine Islands.

Province.	Race.	Number of—		Children.		Single.		Maried.		Widowers.	Widows.	Total.
		Males.	Females.	Male.	Female.	Male.	Female.	Male.	Female.			
Abra[1]	Filipino	44	55	2		10	15	18	22	14	18	99
Albay[1]	do	365	301	73	67	177	150	84	47	31	37	666
Ambos Camarines[1]	do	136	116	8	16	64	46	42	19	22	35	252
Antique[1]	do	72	59	9	4	28	23	20	10	15	22	131
Bataan	do	19	16			9	10	5	2	5	4	35
Batangas[1]	do	92	88	15	7	32	88	32	10	13	33	180
Bohol	do	211	160	37	16	109	82	47	29	18	33	371
Bulacan[1]	do	122	82	14	6	44	35	37	17	27	24	204
Cagayan[1]	do	51	64	3	4	15	14	18	13	15	33	115
Capiz[1]	do	108	109	7	5	30	39	43	17	28	48	217
Cavite	do	74	47	6	5	25	18	29	8	14	16	121
Cebu	do	344	294	40	22	152	133	106	58	46	81	638
Ilocos Norte[1]	do	90	107	5	1	21	36	37	18	27	52	197
Ilocos Sur[1]	do	114	132	13	15	38	37	40	29	23	51	246
Iloilo[1]	do	229	235	28	14	92	89	69	31	40	101	464
La Laguna	do	77	49	12	4	25	18	24	10	16	17	126
Leyte[1]	do	326	195	64	22	168	95	57	29	37	49	521
Masbate[1]	do	32	35	2	2	14	13	12	7	4	13	67
Misamis[1]	do	71	48	6	4	43	21	14	12	8	11	119
Nueva Ecija[1]	do	43	42	3	3	16	13	12	9	12	17	85
Occidental Negros	do	165	104	5	6	54	30	46	24	60	44	269
Oriental Negros[1]	do	142	103	14	15	57	34	36	15	35	89	245
Pampanga	do	92	70	11	9	45	30	26	11	10	20	162
Pangasinan[1]	do	166	183	12	15	63	47	64	43	27	78	849
Rizal	do	99	77	1	2	40	30	42	16	16	29	176
Romblon[1]	do	33	27	6	2	11	14	11	8	5	3	60
Samar[1]	do	133	69			67	29	32	20	34	20	202
Sorsogon	do	202	123	27	17	118	77	46	18	11	11	325
Surigao[1]	do	37	26	6	2	14	6	12	12	5	6	63
Tarlac[1]	do	47	36	1	1	17	10	22	8	7	17	83
Tayabas[1]	do	101	84									185
Zambales	do	59	46	3	2	19	9	21	14	16	21	105
Union[1]	do	9	4			5	1	3	1	1	2	13
Total		3,905	3,186	433	288	1,622	1,242	1,107	587	642	985	7,091

[1] Revised report not received.

Report of systematic vaccinations.

Province.	1907 July.	August.	September.	October.	November.	December.
Albay	33,722	22,760	33,797	28,459	30,116	14,941
Bohol	21,516	17,852	17,659	20,108	12,844	15,705
Bulacan	17,501	11,094	16,834	18,766	7,487	14,624
Capiz	17,184	12,241	6,884	12,506	22,997	18,479
Iloilo	13,687	13,354	20,889	25,820	17,629	17,728
Occidental Negros	15,858	19,226	29,414	7,217	9,814	14,804
Nueva Ecija	10,531	12,076	8,927	8,380	9,906	10,825
Pangasinan	71,452	51,007	49,744	505	--------	--------
Sorsogon	18,249	--------	--------	--------	--------	6,518
Tarlac	14,788	20,004	20,080	26,053	28,256	16,257
Tayabas	24,379	20,199	8,592	11,608	--------	--------
Surigao	--------	--------	--------	--------	--------	--------
Ambos Camarines	--------	--------	--------	--------	--------	--------
Lepanto-Bontoc	--------	--------	--------	--------	--------	--------
Total	258,867	199,813	212,820	154,417	139,049	129,876

Province.	1908 January.	February.	March.	April.	May.	June.	Total.
Albay	33,187	29,180	--------	11,659	17,127	--------	254,948
Bohol	6,063	--------	--------	--------	--------	--------	111,747
Bulacan	14,946	10,364	12,444	(1)	9,373	(1)	133,433
Capiz	16,832	18,801	13,240	32,410	11,891	(1)	183,465
Iloilo	21,675	21,475	24,373	27,965	19,754	(1)	224,344
Occidental Negros	20,709	11,243	18,348	22,312	16,024	(1)	184,969
Nueva Ecija	9,170	5,978	11,052	(1)	(1)	6,316	92,656
Pangasinan	--------	--------	--------	--------	--------	--------	172,708
Sorsogon	10,737	--------	--------	--------	--------	--------	35,504
Tarlac	287	--------	--------	--------	--------	--------	125,725
Tayabas	--------	--------	--------	--------	--------	--------	64,778
Surigao	9,589	8,709	11,184	(1)	9,949	(1)	39,431
Ambos Camarines	--------	--------	31,362	10,645	--------	--------	42,007
Lepanto-Bontoc	--------	9,993	5,511	4,993	5,560	(1)	26,057
Total	143,195	115,738	127,514	109,984	89,678	6,316	1,686,767

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[1] Reports not received.

Amount of vaccine virus distributed by the Bureau of Health.

	Units.
Number on hand July 1, 1907	3,498
Received from the Bureau of Science	2,774,950
Total to be accounted for	2,778,448
Distributed as per itemized statement	2,775,587
Remaining on hand June 30, 1908	2,861

Places at which vaccine virus was distributed.

Provinces:	Units.
Albay	219,180
Ambos Camarines	114,200
Bataan	4,300
Batangas	20,200
Benguet	5,830
Bulacan	132,520
Cagayan	4,200
Capiz	316,960
Cavite	13,330
Cebu	360,000
Culion	3,200
Ilocos Norte	7,000
Ilocos Sur	15,200
Iloilo	590,000
Isabela	1,000
La Laguna	36,000
Lepanto-Bontoc	32,000
Leyte	25,000
Masbate	700
Nueva Ecija	107,760
Nueva Vizcaya	1,500

Provinces—Continued.	Units.
Palawan	400
Pampanga	42,020
Pangasinan	267,685
Rizal	23,140
Samar	25,000
Sorsogon	25,800
Surigao	65,000
Tarlac	147,200
Tayabas	60,400
Union	17,200
Zambales	100
Total	2,684,025
Manila:	
Health districts	74,900
Other institutions	16,662
Total	91,562
Grand total	2,775,587

Report of sera.

	Anti-pestic.	Plague prophylactic.	Assorted.
Bottles on hand at the beginning of the year	231	1,026	110
Received from the Bureau of Science			82
Total to be accounted for	231	1,026	192
Issued	1	2	71
Total bottles at the end of the year	230	1,024	121

Smallpox and plague[1] report for Manila.

Nationality.	Smallpox.			
	Cases.		Deaths.	
	Male.	Female.	Male.	Female.
Americans	7	2	3	
Filipinos	113	84	34	37
Foreigners	2	1		
Chinese	4		2	
Total	126	87	39	37

District and age.	Smallpox.	
	Cases.	Deaths.
Health districts:		
No. 1, Intramuros	20	7
No. 2, Meisic	76	23
No. 4, Sampaloc	14	7
No. 5, Tondo	96	35
No. 6, Paco	7	4
Total	213	76
Ages:		
Under 1 year	11	6
1 year to 10 years	114	51
10 years to 20 years	43	7
20 years to 30 years	29	5
30 years to 40 years	12	5
40 years to 50 years	3	1
Over 50 years	1	1
Total	213	76

[1] No cases of plague.

Number of cases found alive	176
Number of cases found dead	37

NOTE.—Two of the deaths are outside cases brought to San Lazaro Hospital.

Cholera report, city of Manila.

Nationality	Cases.		Deaths.	
	Male.	Female.	Male.	Female.
Americans	8	3	1	1
Filipinos	225	161	194	143
Foreigners	11	2	7	2
Chinese	18	....	17	....
Total	262	166	219	146

District and age.	Cases.	Deaths.
Health districts:		
No. 1, Intramuros	79	66
No. 2, Meisic	133	115
No. 4, Sampaloc	78	63
No. 5, Tondo	102	91
No. 6, Paco	36	30
Total	428	365
Ages:		
Under 1 year	1	1
1 year to 10 years	72	66
10 years to 20 years	56	44
20 years to 30 years	143	118
30 years to 40 years	84	73
40 years to 50 years	42	35
Over 50 years	30	28
Total	428	365

Number of cases found alive	186
Number of cases found dead	242
Total	428

NOTE.—Two of the deaths are cases from Pangasinan Province.

Cholera in the provinces.

Towns.	Cases.	Deaths.	Towns.	Cases.	Deaths.
Pangasinan:			Pangasinan—Continued.		
Bautista	155	117	Santo Tomas	1	1
Calasiao	276	195	Total	2,826	1,815
Dagupan	423	350	Per cent of deaths	....	64.22
Mangaldan	582	298	Leyte:		
San Carlos	356	236	Mandaon	53	42
San Jacinto	138	74	Carigara	86	77
Pozorrubio	102	41	Barugo	10	10
Malasiqui	83	66	Total	149	129
Balungao	98	53	Per cent of deaths	....	86.57
Binalonan	189	117	Capiz:		
Manaoag	95	56	Sapian	40	29
Bayambang	98	80	Dumalag	2	1
Lingayen	22	13	Ibisan	51	47
Urdaneta	10	4	Pilar	2	1
San Fabian	4	4	Capiz	238	217
Alaminos	1	....	Dao	8	7
Asingan	33	19	Panay	226	120
San Manuel	25	11	Panitan	46	29
Bolinao	1	1	Pontevedra	52	49
Tayug	14	5	Jamindan	1	1
Santa Maria	32	14	Mambusao	12	7
Natividad	4	4	Total	678	508
Binmaley	8	6	Per cent of deaths	....	81.42
Santa Bárbara	41	29			
Agno	29	14			
Sual	8	8			
San Nicolás	8	2			
Mangatarem	1	....			
Villasis	4	2			

Cholera in the provinces—Continued.

Towns.	Cases.	Deaths.
Bataan:		
Orion	2	2
Balanga	1	
Orani	6	7
Abucay	3	2
Dinalupijan	11	9
Total	23	20
Per cent of deaths		86.95
Bulacan:		
San Rafael	1	
Bocaue	34	24
Bulacan	14	16
Hagonoy	30	25
Malolos	18	11
Paombong	20	14
San Miguel	29	24
Quingua	5	5
Calumpit	16	5
Baliuag	10	7
Total	177	131
Per cent of deaths		74.01
Nueva Ecija:		
Cuyapo	1	1
Total	1	1
Per cent of deaths		100.00
Cavite:		
Bacoor	4	4
San Roque	2	1
Cavite	20	19
Total	26	24
Per cent of deaths		92.30
La Laguna:		
San Pablo	1	1
Pagsanjan	2	2
Santa Cruz	1	
Total	4	3
Per cent of deaths		75.00
Pampanga:		
San Luis	2	2
Mexico	2	2
Minalin	14	13
San Fernando	15	14
Santa Rita	8	7
Sexmoan	56	50
Bacolor	79	60
Betis	13	12
Angeles	3	3
Floridablanca	8	4
Guagua	58	48
Lubao	47	33
Macabebe	55	47
Masantol	7	6
Arayat	1	1
Apalit	9	9
Candaba	1	1
Mabalacat	1	1
Total	379	313
Per cent of deaths		82.58
Ilocos Sur:		
Santa Maria	4	2
Total	4	2
Per cent of deaths		50.00
Zambales:		
San Narciso	76	61
San Felipe	141	93
Botolan	1	1
San Antonio	2	1
Total	220	156
Per cent of deaths		70.86
Union:		
Agoó	14	12
Santo Tomas	10	6
Aringay	2	
Tubao	30	22
Luna	6	5
Total	62	45
Per cent of deaths		72.58
Rizal:		
Las Piñas	46	40
Navotas	1	
Pasay	17	11
San Juan del Monte	7	5
Antipolo	4	4
Mariquina	64	53
Pasig	12	12
San Mateo	3	3
San Roque	1	
Cainta	1	1
Malabon	2	2
Montalban	1	1
Caloocan	7	6
Parañaque	5	3
San Felipe Neri	5	4
Taguig	1	1
Total	177	146
Per cent of deaths		82.48
Benguet:		
Baguio	1	
Tarlac:		
Moncada	12	8
Camiling	6	3
Total	18	11
Per cent of deaths		61.11
Mindoro:		
Lubang	32	20
Total	32	20
Per cent of deaths		62.50
Grand total	4,772	3,324
Per cent of deaths, all provinces		69.65

Chinese hospital sick report.

[Dr. Tee Han Kee, physician in charge.]

Status.	Number.		Total.
	Males.	Females.	
In hospital at last report	27		27
Received	317		317
Discharged	173		173
Transferred	5		5
Died	119		119
Remaining in hospital	47		47

Number of patients treated for the cure of opium habit.

Place and nationality.	Remaining from previous year.	Admitted during year.	Recovered.	Improved.	Not improved.	Remaining at close of year.
San Lazaro:						
Chinese		383	365	18		18
Filipinos		17	14	3		3
Others		1	1			
Total		401	380	21		21
San Juan de Dios:						
Chinese		223	63	[1]2		158
Filipinos		36	34			2
Total		259	97	2		[2]160
Mission, Iloilo:						
Chinese			8	8		
Cebu:						
Chinese		27	27			
Filipinos		37	37			
Others		1	1			
Total		65	[3]65			
Grand total		725	542	28		181

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[1] Escaped 1, discharged better 1.
[2] Transferred to San Lazaro for treatment.
[3] Relapsed after leaving hospital.

BAGUIO HOSPITAL DIVISION.

Cases treated at Baguio Hospital.

Diseases	American	European.	Filipino.	Japanese.	Chinese.	Total.	Female.	Died.
Abortion:								
Accidental	1					1	1	
Threatened			1			1	1	
Abscess		1	1	1		6		
Adenitis, inguinal, suppurative, gonorrheal	1		5	2		8		
Amputation:								
Of fingers			2			2		
Of right femur	1					1		
Asthma			1			1		
Beri-beri				1		1		
Bronchitis:								
Acute			8			8		
Capillary			1			1		
Burns	1			1		2		
Carbuncle, right lumbar region			1			1		
Cerebral concussion			2			2		
Cholera, Asiatic			2			2		

Cases treated at Baguio Hospital—Continued.

Diseases.	American.	European.	Filipino.	Japanese.	Chinese.	Total.	Female.	Died.
Conjunctivitis, acute			1			1		
Contusion, knee			1			1		
Dengue fever	1		1			2	1	
Dermatitis, undetermined			1			1		
Diarrhea	3		3	1		7		
Dysentery, amœbic	14	2	6	3	1	26	1	1
Dysentery, catarrhal	2		3			5	1	
Epididimitis, gonorrheal	1					1		
Enteritis, acute				2		2		
Entero-colitis			2			2		
Face, plastic operation of			1			1	1	1
Fever:								
Ephemeral			2			2		
Puerperal			1			1	1	1
Fistula, rectal			1			1		
Fractures:								
Ribs (eleventh and twelfth)	1					1		
Right clavicle			1			1		
Right tibia and right fibula			1			1	1	
Anatomical neck, left humerus	1					1	1	
Gastritis:								
Acute				1		1		
Chronic	3			1		4		
Gastro-enteritis	1	1	2	1		5	3	1
General debility			1			1		
Heart:								
Aortic stenosis of			1			1		
Mitral regurgitation of			1			1		
Hemorrhoids:								
External	1					1		
Internal			1			1		
Hernia, inguinal			2			2		
Indigestion, intestinal, acute		1				1		
Infection:								
Forearm and arm			1			1		
Foot			1			1		
Hand			1			1		
Leg			1			1		
Labor, premature			1			1	1	
Liver:								
Cirrhosis of	1					1		
Hypertrophic cirrhosis of				1		1		1
Malaria	4		16	12		32	1	
Mammitis, suppurative			1			1	1	
Necrosis, inferior maxillary			1	1		2		
Necrosis, right tibia			1			1		
Nephritis, chronic		1				1		
Neurasthenia		1				1	1	
Osteo-periostitis				1		1		
Otitis media, suppurative			1	1		2		
Parasites, intestinal	1		13	7		21	1	
Parturition	3		1			4	4	
Parotitis			1			1		
Peritonitis, general			1			1		1
Phosphaturia				1		1		
Pneumonia, lobar			1			1		
Renal lithiasis	1					1	1	
Retained secundines, following parturition			1			1	1	
Rheumatism, muscular	1		3	1		5		
Sprain, lumbar muscles			1			1		
Sprue	1					1		
Tonsilitis, follicular	2					2		
Tinea imbricata			3			3		
Trachoma, chronic			1			1		
Tuberculosis, pulmonary			1			1		1
Tumor, benign, left superior maxilla			1			1		
Tumor, type undetermined			1			1		
Ulcers:								
Chronic, of leg			1			1	1	
Corneal			1			1		
Under observation	1	1	4			6		
Undetermined			1			1		
Urethritis, gonorrheal, anterior:								
Acute			1			1		
Chronic	1		1			2		
Wounds:								
Contused	1					1		
Incised			5	2		7		
Lacerated			12	4		16	1	
Stab					1	1	1	
Crushing, foot			1			1		
Total	49	8	136	45	2	240	26	7

Out-door department, Baguio Hospital.

Diseases.	Number of cases.
Abrasions	5
Abscess	8
Acne	3
Adenitis, tubercular	1
Adenoids	1
Alopecia	1
Amenorrhea	2
Amputation of finger	1
Asthenia	18
Asthma	2
Auto-intoxication, intestinal	2
Bronchitis:	
Sub-acute	64
Acute	104
Burns	8
Catarrh, nasal, acute	2
Cellulitis	1
Chancroid	1
Clavus	2
Colitis, acute	1
Conjunctivitis:	
Acute	60
Chronic	1
Constipation:	
Acute	116
Chronic	22
Contusion	17
Dengue	1
Dental caries	15
Dentition, difficult	1
Dermatitis, cause undetermined	35
Dermatitis venata	1
Dhobie itch	30
Diarrhea, acute	93
Dressing for amputation	1
Dysentery, acute	60
Eczema:	
Acute	8
Capitis, chronic	2
Endometritis:	
Acute	2
Cervical	1
Enteritis, acute	1
Entero-colitis	2
Enucleation of eye	1
Epididymitis, gonorrheal	3
Erysipelas, facial	1
Eustachian tube, obstruction of, catarrhal	1
Fever, undetermined	1
Fistula, rectal	1
Flat foot	1
Foreign body embedded in cornea	1
Foreign body in eye	11
Fractures:	
Colles	1
Humerus	2
Metacarpal bone	2
Rib	1
Furuncle	2
Gastritis:	
Acute	146
Chronic	14
Gastro-enteritis:	
Acute	7
Chronic	4
General debility	4
Goiter	8
Headache	7
Heart:	
Aortic stenosis of	2
Dilatation, of	1
Mitral regurgitation of	2
Hemorrhoids:	
External	8
Internal	2
Hordeolum	1
Impacted cerumen	2
Impetigo contagiosa	1
Indigestion:	
Gastric	1
Intestinal—	
Acute	8
Chronic	1
Infections	8
Insomnia	6
Laryngitis, acute	4
Leprosy	2
Malaria	424
Malarial cachexia	3
Mammitis	1
Meatotomy	1
Menorrhagia	9
Naso-pharyngitis, acute	2
Necrosis:	
Inferior maxillary	1
Superior maxillary	1
Nephritis, chronic	4
Neuralgia, rheumatic	6
Neurasthenia	6
Nipple, fissure of	1
Otitis media:	
Acute—	
Catarrhal	8
Suppurative	2
Chronic, catarrhal	2
Ovarian cyst	1
Ovarian tumor	1
Parotitis, acute	2
Parasites, intestinal	17
Pediculosis capitis	1
Pharyngitis, acute	9
Pleurisy, chronic	1
Removal of finger nail	1
Removal of toe nail	8
Rheumatism, muscular:	
Acute	152
Chronic	9
Of diaphragm	1
Rhinitis, acute	8
Sciatica, rheumatis	8
Seminal vesicullitis, chronic, gonorrheal	1
Sprains	31
Stomatitis, parasitic, acute	31
Stricture of posterior urethra	2
Syphilis:	
Primary	2
Secondary	10
Tertiary (keratitis)	1
Teeth extracted (cases)	64
Tinea imbricata	12
Tinea versicolor	2
Tonsilitis, follicular, acute	6
Trachitis	1
Trachoma:	
Acute	4
Chronic	18
Tuberculosis, pulmonary	20
Tumor, benign, scalp	1
Ulcers	87
Under observation	1
Undetermined	1
Urethritis:	
Gonorrheal—	
Acute (female)	8
Posterior	1
Anterior	9
Chronic, posterior	1
Simple—	
Chronic, posterior	1
Anterior	2
Uterus:	
Prolapse of	2
Retroversion of	1
Varicella	4
Verruca acuminata	1
Vaginitis, simple	1
Vulvitis, acute	1
Wounds:	
Contused	10
Infected	59
Incised	88
Lacerated	54
Punctured	8
Total	2,051

Number of specimens examined at the Baguio Sanitarium laboratory.

Specimen.	American.	European.	Japanese.	Chinese.	Filipino.	Total.
Feces	91	6	69	4	110	280
Blood:						
Malaria	20	3	15		24	62
Leucocyte count	4		2		1	7
Red cell count	4	1				5
Hemoglobin	2					2
Stomach contents	5		3			8
Urine	46	4	9		16	75
Miscellaneous	4		5	3	20	32
Total	176	14	103	7	171	471

Intestinal parasites, Baguio Hospital.

	American.	European.	Japanese.	Chinese.	Filipino.	Igorot.	Total.
Number of persons examined	49	4	34	3	34	23	147
Parasites found:							
Ascaris lumbricoides	5		5		9	10	29
Ankylostomum duodenale			9		6	6	21
Strongyloides intestinalis	1				2	1	4
Trichocephalus hominis	5		14	1	19	13	52
Distomum hepaticum						1	1
Tænia solium					1	3	4
Ameba	12	1	5	2	2	8	30
Total	23	1	33	3	39	42	141

Miscellaneous statistics, Baguio Hospital.

Number of cases treated from July 1, 1907, to June 30, 1908	2,291
Number of cases treated during same period of 1906 to 1907	1,635
Increase over previous years	656
Per cent of increase	40.6
Number of days spent in hospital by all patients	3,340
Average number of days per patient	13.68
Number of surgical dressings from July 1, 1907, to June 30, 1908	2,316
Numerical increase over previous year	1,106
Per cent of increase	91.4
Number of surgical operations from July 1, 1907, to June 30, 1908	200
Numerical increase over previous fiscal year	157
Per cent of increase	365.0
Number of prescriptions filled from July 1, 1907, to June 30, 1908	2,397
Numerical increase over previous fiscal year	403
Per cent of increase	20.1
Number of revisits (daily clinic) from July 1, 1907, to June 30, 1908	2,604
Numerical increase over previous fiscal year	1,250
Per cent of increase	92.3
Number of Constabulary examinations for enlistment, etc	14
Number of autopsies performed	3

Average cost of subsistence per person, per day, including patients and employees, etc., of the Baguio Hospital division.

July, 1907	₱0.827
August, 1907	0.9023
September, 1907	0.805
October, 1907	0.6995
November, 1907	0.712
December, 1907	0.828
January, 1908	0.694
February, 1908	0.699
March, 1908	0.725
April, 1908	0.883
May, 1908	0.876
June, 1908	0.678
Net average cost per person, per day, for twelve months, fiscal year 1908	0.7822
Net average cost per person, per day, for twelve months, fiscal year 1907	0.8589

BILIBID PRISON.

Report of sick at Bilibid Prison.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
Hospital "A":						
Malaria	7	299	1		288	17
Malarial cachexia		3			3	
Grippe	1	109			108	2
Dysentery:						
Acute		62			61	1
Amebic	39	617	2		623	31
Beriberi	1	115	5		72	39
Varicella	1				1	
Tuberculosis, pulmonary	1	141	5	124	7	6
Adenitis, tubercular		4			4	
Syphilis	2	14			14	2
Lipoma	1	10			11	
Rheumatism, acute	2	143			140	5
Scurvy	1	2			3	
Diabetes mellitus		1			1	
Anemia, pernicious	1	20			18	3
Alcoholism		2			2	
Morphinism		35			18	17
Myelitis, acute	1	1			2	
Mania		29		22	7	
Neuritis		4			4	
Conjunctivitis	1	44			44	1
Hypermetrophia	1				1	
Iritis		8			6	2
Pterygium	1	8			7	2
Keratitis	1	3			4	
Otitis	1	6			7	
Hemorrhoids		20			18	2
Varicocele	1	8			4	
Adenitis		8			8	
Rhinitis		15			15	
Bronchitis:						
Acute	2	225			215	12
Chronic		15			13	2
Pneumonia, lobar	4	31	10		22	3
Empyema		2	1		1	
Gastritis, acute	1	132			123	10
Ankylostomiasis	60	1,774			1,815	19
Ascaris	10	764			774	
Oxyuris		26			26	
Tenia nana	1	1			2	
Tenia saginata		26			26	
Balantidium coli	1	17			18	
Opisthorchis sinensis	3	10			13	
Paragonimus westermanii	2	14			16	
Schistosoma japonicum	5	5			10	
Hernia	1	16			16	1
Abscess, ischio-rectal		21			19	2
Fistula in ano	2	47			44	5
Constipation	1	41			42	
Prolapse of rectum		2			2	
Nephritis, interstitial	2	57	5		48	6
Cystitis		8			7	1
Fistula urinary	1	2			2	1
Hydrocele	1	20			20	1
Orchitis	2	48			45	
Endometritis	1	1			2	
Furuncle		16			16	
Phlegmon		9			9	
Dermatitis		6			7	
Eczema	2	7			9	
Tinea imbricata	2	14			16	
Ulcer, inflamed	1	15			16	
Wounds	1	108			106	3
Burns, by caustic		7			7	
Circumcision	1	57			58	
Malaise		31			31	
Resection of rib		1			1	
Septicemia, from multiple abcess		4	2	1	1	
Angina pectoris		5	1		4	
Aneurismal tumor		1			1	
Amblyopia		5			5	
Appendicitis		1			1	
Carbuncle		1			1	
Chancroid		1			1	
Hysterism		1			1	
Herpes		8			8	

Report of sick at Bilibid Prison—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
Hospital "A"—Continued.						
Mercurial stomatitis		1			1	
Rheumatic arthritis		5			5	
Sebaceous cyst		20			20	
Senile debility		4			4	
Tachycardia		3			3	
Tonsilitis		1			1	
Biliary lithiasis		3			3	
Stomatitis, acute		5			5	
Asthma		8			8	
Abscesses		49			42	7
Clavus		2			2	
Enteritis, acute		18			15	3
Epilepsy, major		3		1	2	
Filariasis		1			1	
Gangrene		2			2	
Hemicrania		2			2	
Hepatic cirrhosis		2			1	1
Laryngitis		12			12	
Mydriasis		1			1	
Osteitis		3			2	1
Pinta		4			4	
Smallpox		2		2		
Urticaria		4			4	
Colitis		16		1	15	
Dhobie itch		29			30	
Dengue fever		1			1	
Epithelioma		4			4	
Gonorrhea		7			6	
Ophthalmia		2			2	
Pneumonia, lobar		1	1			
Paralysis, facial		1			1	
Parotitis		1			1	
Pediculosis capitis		2			2	
Posterior sclerosis		3		1	1	1
Staphyloma		2			2	
Serpiginous ulcer		1				1
Acne		13			13	
Asystole		1			1	
Blepharitis		1			1	
Dismenorrhea		1			1	
Epiphora		1			1	
Furunculosis		1			1	
Helminthiasis		1			1	
Herpes zoster		8			6	2
Neurosis		4			4	
Hemorrhage, cerebral		2	1		1	
Hemoptysis		4			4	
Impetigo		2			2	
Lymphangitis		2			2	
Opiumism		20			20	
Polipus, anal		1			1	
Paraphimosis		4			4	
Pharyngitis		4			4	
Varioloid		12		12		
Vaccinia		3			3	
Epistaxis		1			1	
Mumps		48			45	3
Arterio-sclerosis		5	2		3	
Neurasthenia		5			5	
Ataxia, locomotor		5			4	1
Tumor, ovarian		1	1			
Trachoma		53			46	7
Gingivitis		2			2	
Alcoholic cirrhosis		1			1	
Bubo		3			3	
Cataract		4			3	1
Cholera, asiatic		8	3	1	4	
Chalazion		3			3	
Chylocele		1			1	
Dermatitis		4			4	
Erythema		3			3	
Fever, catarrhal		1			1	
Hygroma		1			1	
Measles		4			4	
Neuralgia		6			6	
Pemphigus		7			6	1
Peritonitis, tuberculous		2	1		1	
Posthitis, balano-		1			1	
Paraplegia, spastic		3			1	2

Report of sick at Bilibid Prison—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
Hospital "A"—Continued.						
Synovitis		1			1	
Tenia hominis		1			1	
Torticolis		1			1	
Ulceration, with prolapse of rectum		1			1	
Vitiligo		1			1	
Varicose veins		1			1	
Balanitis		1			1	
Colic, intestinal		5			5	
Corneal ulcer		4			4	
Dysentery, chronic		2			2	
Dispepsia		24			22	2
Gastrointestinal catarrh		2			2	
Gastralgia		3			3	
Hordeolum		1			1	
Pneumonia, broncho		2	2			
Stenosis		1			1	
Tendosinovitis		1			1	
Leprosy		2				2
Blenorrhage		1			1	
Colic, gastric		1			1	
Enteritis, gastro		3	1		2	
Hemiplegia		1				1
Indigestion, acute		2			2	
Aortic insufficiency		3			3	
Corneal opacity		2			2	
Endocarditis		1	1			
Hernia, diaphragmatic		1	1			
Mitral insufficiency		3	3			
Myalgia		1			1	
Paresis		1			1	
Urethral stricture		3			2	1
Cellulitis		1			1	
Cardiac insufficiency		4	2		2	
Diarrhea		5			4	1
Dislocation of shoulder		1			1	
Entero-colitis		2			1	1
Mastoid abscess		1				1
Prolapse of rectum		1			1	
Relaxation of scrotum		1				1
Relaxation of prepuce		1			1	
Spinal sclerosis		3				3
Hepatitis		2			2	
Mitral regurgitation		1			1	
Nephritis, parenchymatous		1	1			
Pericarditis, adhesive		1	1			
Elephantiasis		1				1
Cardio-sclerosis		1				1
Aortic stenosis		1	1			
Lumbago		5			5	
Sprains		3			3	
Tuberculosis, general		2	2			
Burns		4			4	
Tumors		3			2	1
Total Hospital "A"	172	5,928	56	165	5,636	243
Hospital "B":						
Tuberculosis, pulmonary	153	124	58	1	62	156
Total Hospital "B"	153	124	58	1	62	156
Grand total	325	6,052	114	166	5,698	399

Bilibid Prison report of deaths.

Diseases.	Presidio.			Carcel.		Total.	Condition.			Norte Cemetery.
	Filipinos.		Chinese, male.	Filipinos, male.	Chinese, male.					
	Male.	Female.					Single.	Married.	Widower.	
Intermittent fever and malarial cachexia	1					1		1		1
Asiatic cholera	4					4	2	2		4
Dysentery	1			1		2		2		2
Other epidemic diseases (beriberi)	4			1		5	2	2	1	5
Purulent infection and septicemia	1					1		1		1
Tuberculosis of lungs	60			4	1	65	25	37	8	65
Tuberculosis of larynx	1					1		1		1
General tuberculosis	3					3	1	1	1	3
Cancer and other malignant tumors of the female genital organs		1				1		1		1
Acute articular rheumatism	1					1	1			1
Congestion and hemorrhage of the brain	1					1		1		1
Pericarditis	2					2		2		2
Organic diseases of the heart	4			2		6	2	2	2	6
Angina pectoris	1					1		1		1
Diseases of the arteries, atheroma, aneurism, etc	2					2		1	1	2
Broncho-pneumonia	2					2	1	1		2
Pneumonia	8		1	3		12	4	5	3	12
Diarrhea and enteritis (2 years and over)	1					1		1		1
Hernia and intestinal obstructions	2					2	1	1		2
Acute nephritis	1			1		2		2		2
Bright's disease	3			1		4	2	2		4
Diseases of the bladder	1					1		1		1
External violence				22		22	5	17		22
Total	104	1	1	35	1	142	46	85	11	142

Died in Bilibid hospitals, 114; legally executed, 22; died in San Lazaro Hospital, 5; and died in Hospicio de San José, 1; total, 142.

Iwahig penal colony, sick report.

Diseases.	Remaining July 1, 1907.	Admitted.	Died.	Discharged.	Remaining.
Anthrax	1	1		2	
Arthritis		4		4	
Abscesses		25		25	
Bronchitis, acute		11		9	2
Diseases of the ear	1			1	
Enterocolitis		7		7	
Enteritis		4		4	
Fistula, anal		2		2	
Gastritis, acute		13		13	
Wounds, from various weapons	2	44		44	2
Herpes		3		3	
Malaria	9	290	1	290	8
Rheumatism	2	23		25	
Syphilis	1	4		5	
Ulcers	2	10		10	2
Asthma		1		1	
Laryngitis		4		4	
Orchitis		4		4	
Contusions, various regions		13		13	
Congestion, pulmonary		2		2	
Scabies		3		3	
Diarrhea		9		9	
Dysentery, acute		5		5	
Gastritis, chronic		3		3	
Hemorrhoids		1		1	
Gastro-enteritis		4		4	
Tuberculosis, pulmonary		6	1	3	2
Furuncle		2		2	
Complete fracture of femur		2		2	
Conjunctivitis		3		3	
Influenza		17		17	
Beriberi, wet		1	1		
Bronchitis, chronic		3		3	
Dysentery, chronic		2		2	
Eczema		4		4	

Iwahig penal colony, sick report—Continued.

Diseases.	Remaining July 1, 1907.	Admitted.	Died.	Discharged.	Remaining.
Abortion		1		1	
Bites of poisonous animals		1		1	
Neuritis		1		1	
Impetigo		1		1	
Wounds:					
Punctured		1		1	
Incised		7		7	
Contused		4		4	
Cerebral hemorrhage		1	1		
Mitral insufficiency		1	1		
Adenitis		1		1	
Angina pectoris		1		1	
Gastritis		1		1	
Pregnancy		1		1	
Gingivitis		2		2	
Whitlow		1		1	
Absortion of deleterious gases		1		1	
Filariasis		2		2	
Polyps in the mouth		1		1	
Constipation		2		1	1
Otitis, acute external		1		1	
Naso-laryngitis, catarrhal, acute		6		6	
Erythema		1		1	
Organic diseases of the heart		2	1	1	
Epilepsy		1			1
Pleurisy		1		1	
Paragonimus westermanii		1			1
Under observation		3		2	1
Total	18	577	6	569	20

CIVIL HOSPITAL DIVISION.

Medical cases, Civil Hospital.

Diseases.	Male.	Female.	Deaths.
Amebiasis intestinalis	81	19	3
Alcoholism	20		
Apoplexy	1		
Amblyopia	1		
Arthritis, chronic	1		
Asthma	2		
Aortic regurgitation	1		
Atony of bowels		1	
Bronchitis:			
Subacute	5		
Acute	22	5	
Chronic	9	1	
Beriberi	27	1	
Constipation:			
Acute	1	1	
Chronic	8		
Cholera, Asiatic	1		
Colitis	4		
Colic:			
Abdominal	7		
Renal	4		
Coryza	2		
Dengue fever	17	1	
Diarrhea, acute	2		
Diabetes, mellitus	1		
Dyspepsia	1		
Delirium tremens	2		
Dementia	1		
Diphtheria	1		
Dysentery (nonamœbic)	12	3	1
Dhobie itch	1		
Enteritis:			
Gastro	13	6	
Acute	11	1	
Enteritis	9		
Endocarditis	1		
Epilepsy	3		
Enteritis, tubercular		1	
Filariasis	1		
Febricula	1		
Gastralgia	1		
Gastritis:			
Acute	17	4	
Chronic	9	2	1
Hysteria		1	
Hepatitis	1		
Headache, idiopatic	1		
Heat, exhaustion	1	1	
Hemophthisis	1		
Hemophilia	1		
Indigestion:			
Intestinal	1		
Acute	3		
Influenza	7		
Intestinal parasites:			
Ascaris lumbricoides	9	3	
Tenia	2		
Trichocephalus dispar	3	1	
Trichinosis	1		
Uncinaria	1		
Locomotor ataxia	1		
Lumbago	2		
Malaria:			
Cachexia	20	5	1
Tertian	58	3	
Estivo-autumnal	109	7	
Quartan	3		
Marasmus		3	
Malingering	2		
Migraine	2		
Mumps	1		
Measles	2		
Mercurism	1		
Morphine poisoning	1		
Mitral regurgitation	2		
Multiple neuritis		1	1
Malarial spleen	1		
Nausea of pregnancy		6	

Medical cases, Civil Hospital—Continued.

Diseases.	Male.	Female.	Deaths.
Nephritis:			
Acute	1		
Interstitial—			
Chronic	3		
Subacute	1		
Parenchymatous, chronic	2		
Neurasthenia	8	7	
Neuralgia, facial	3		
Parotitis	1		
Paranoia	1		
Paralysis:			
Facial	1		
Partial	2		
Paresis	1		
Paraplegia (spastic)	2	2	
Peliosis	1		
Peritonitis (tubercular)		2	2
Pleurisy	5		
Pharyngitis	3		
Ptomaine poisoning	7		
Pneumonia:			
Lobar	8		
Bronchial	3	1	
Rachitism			1
Syphilis:			
Secondary	4		
Tertiary	7		
Primary	1		
Syncope	4	1	
Sciatica	5		
Smallpox	1		
Tuberculosis	35	2	2
Typhoid fever	12	1	
Tonsilitis, simple	1		
Undetermined	23	2	1
Vaccinia	1		
Total	686	95	13

Surgical cases, Civil Hospital.

Diseases.	Male.	Female.	Deaths.
Adenitis:			
Inguinal	3		
Cervical	3		
Appendectomy	45		
Appendicitis, catarrhal:			
Chronic	13	5	
Acute	10	5	
Abscess:			
Jaw	2		
Submaxillary	1		
Ear	1		
Appendiceal	1		
Liver	6		2
Buttock	1		
Neck	1		
Palmar	4		
Foot	5		
Arm		1	
Iliac	1		
Perinephritis	1		
Breast		1	
Leg	1		
Thigh	1		
Testicle	1		
Gluteal	1		
Amputation:			
Of toe	3		
Of fingers	8		
Of leg	1		
Of thigh		1	
Aneurism	1		1
Arthritis:			
Gonorrheal	2	1	
Chronic	2		
Buboes	13		
Burns:			
Hand and wrist	1		
Hands, face and chest	1		
Body	1		
Bursitis:			
Of hand	1		
Elbow	1		
Carcinoma, liver	3		3
Chancroid	7		
Chalazion	2		
Chocked disk	1		
Cholelithiasis	3	2	1
Cholecystitis		2	
Corneal ulcers	6		
Conjunctivitis:			
Purulent	8	1	
Traumatic	4		
Infective	3		
Phlyctenular	3		
Conjunctivitis—Cont'd.			
Acute	5		
Simple	4	1	
Cellulitis:			
Of hand	2		
Of neck	3		
Of face	2		
Of finger	1		
Of foot	6		
Of thigh	1		
Of leg	2		
Circumcision	8		
Cyst, spermatic cord	1		
Contusion:			
Of body	4		
Of foot	8		
Of chest	3		
Of hip	3		
Of eye	3		
Of clavicle	2		
Of leg	1		
Of superior maxilla	3		
Of inferior maxilla	1		
Of head	2		
Of scalp	5		
Concussion of brain	3		2
Cystitis	3	2	1
Cyst, sebaceous	1		
Cataract:			
Operative	8	3	
Traumatic	2		
Carcinoma of tongue	1		
Dermatitis	5		
Dislocation:			
Of elbow, left	2		
Of wrist		1	
Of ankle		1	
Edema of larynx	1		
Epididymitis	3		
Epithelioma, lip	1		
Extraction of teeth	1		
Foreign body in trachea	1		
Fracture:			
Of forearm	2	1	
Of leg	2		
Of metacarpal bone	2		
Metacarpal	3		
Of rib	1		
Of clavicle	2		
Of arm	2	1	
Of tibia	3		
Of skull	1	1	2
Of spine	2		1
Of nose	1		

Surgical cases, Civil Hospital—Continued.

Diseases.	Male.	Female.	Deaths.
Fissure in ano	4	2	
Furunculosis	7		
Gastric ulcer	2		
Gonorrhea	21	2	
Gangrene of toe	1		
Glaucoma	3		
Hydrocele	5		
Hydrothorax		8	
Hemorrhoids	7		
Hemorrhage	1		1
Hematuria	1		
Hernia:			
Inguinal	9		
Femoral	1		
Ventral		1	
Infected foot	10		
Infected leg	2	1	
Infected arm	1	1	
Infected toes	1		
Infected hand	2		
Ingrowing toe nails	8		
Iridectomy	1		
Iritis	5	1	
Keratitis	4		
Lipoma		1	
Lacerated foot	8		
Lacerated fingers	6		
Lacerated hand	1	1	
Lacerated eyebrow	1		
Lacerated ear	1		
Lacerated toe	1		
Laryngitis	1		
Lymphangitis	3		
Leukoma	3		
Mastitis		1	
Myopia		1	
Necrosis of toes	1		
Nephrolithiasis	1		
Orchitis	19		
Otitis media, purulent	5	3	
Paraphimosis	1		
Pemphigus	1	1	
Phthisis, bulbi	1		
Polypus, nasal	1		
Pyemia	1		1
Phlebitis	2		
Rheumatism, gonorrheal	1		
Retention of urine	1		
Rhinitis	1		
Sprained ankle	2		
Sprained back	1		
Sprained knee	2		
Staphiloma	1		
Stricture, rectal		1	
Synovitis of knee	1		
Stricture, urethral	4		
Trachoma	10		
Tonsilitis, suppurative	6	1	
Tumor:			
Of jaw	1		
Of breast	1		
Of foot	1		
Of toe	1		
Of neck	2		
Of brain			1
Torticolis	1		
Ulcers:			
Of leg	2		
Of scrotum	1		
Of face	1		
Of forearm	1		
Of foot	2		
Urticaria	1		
Urethritis	2		
Varicocele	8		
Varicose veins	1	1	
Wound:			
Gunshot—			
Of abdomen		1	
Of neck	1		
Lacerated—			
Foot	5		
Leg	2		
Scalp	4		
Nose	1		
Infected—			
Arm and forearm	1		
Foot	3		
Hand	1		
Punctured—			
Foot	2		
Leg	1		
Lip	1		
Incised—			
Chest	1		1
Hand	1		
Total	514	58	17

Obstetrical and gynecological cases, Civil Hospital.

Disease.	Female.	Deaths.
Abortion:		
Spontaneous	8	
Pyosalphinx	1	
Threatened	2	
Cervicitis	1	
Curettage	20	
Childbirth	48	
Dysmenorrhea	3	
Eclampsia	1	1
Endometritis	12	
Endometritis, chronic	1	
Endocervicitis	1	
Miscarriage	2	
Ovarian cystoma	2	2
Oöphoritis	1	
Pregnancy	5	
Polypus, uterine	2	
Perineorrhaphy	4	
Retroversion of uterus	1	
Septicemia puerperal	2	1
Tubal rupture		1
Vaginismus	2	
Vaginitis	1	
Total	115	5

CULION LEPER COLONY DIVISION.

Report of status of lepers.

Status.	Europeans, male.	Filipinos.		Chinese, male.	Total.
		Male.	Female.		
Remaining July 1, 1907	1	489	248	1	739
Admitted	-----	1,054	499	1	1,564
Born	-----	9	9	-----	18
Discharged	-----	6	1	-----	7
Escaped	-----	11	2	-----	13
Died	-----	698	260	-----	958
Remaining	1	837	493	2	1,333

Average cost of subsistence per leper per day at the Culion leper colony.

July, 1907	₱0.146	January, 1908	₱0.133
August, 1907	0.141	February, 1908	0.114
September, 1907	0.149	March, 1908	0.104
October, 1907	0.143	April, 1908	0.121
November, 1907	0.1385	May, 1908	0.124
December, 1907	0.137	June, 1908	0.136

SANITARY ENGINEERING DIVISION.

Number of orders issued.

Month issued.	Sanitary engineering division.	Health districts.					
		No. 1.	Nos. 2 and 3.	No. 4.	No. 5.	No. 6.	Total.
1907.							
July	70	6	2	18	4	1	101
August	152	2	0	6	4	1	165
September	92	3	2	1	118	5	221
October	56	3	0	0	0	6	65
November	56	6	8	2	1	2	75
December	22	6	0	1	0	0	29
1908.							
January	135	9	0	5	1	1	151
February	57	0	1	0	0	0	58
March	49	10	2	2	2	3	68
April	88	24	3	0	0	0	115
May	41	13	2	1	0	0	57
June	67	0	0	4	0	0	71
Total	885	82	20	40	130	19	1,176

Number of orders obeyed.

Month issued.	Sanitary engineering division.	Health districts.					
		No. 1.	Nos. 2 and 3.	No. 4.	No. 5.	No. 6.	Total.
1907.							
July	56	6	1	12	1	1	77
August	144	2	0	3	1	1	151
September	88	2	2	1	5	5	103
October	45	3	0	0	0	6	54
November	48	6	7	2	1	2	66
December	19	4	0	0	0	0	23
1908.							
January	103	6	0	-----	1	1	115
February	46	0	1	0	0	0	47
March	33	10	1	2	1	2	49
April	76	3	2	0	0	0	81
May	12	0	2	1	0	0	15
June	2	0	0	1	0	0	3
Total	672	42	16	26	10	18	784

Prosecutions for failure to comply with sanitary orders.

Month.	Number of prosecutions.	Amount of fines.
1907.		
July	0	
August	1	₱5.00
September	0	
October	0	
November	[1] 4	20.00
December	5	170.00
1908.		
January	0	
February	0	
March	[2] 3	10.00
April	[3] 6	125.00
May	[1] 3	
June	[4] 20	90.00
Total	42	420.00

[1] 3 withdrawn. [2] 2 withdrawn. [3] 1 withdrawn. [4] 6 withdrawn.

Plans for new buildings approved.

Month.	Health districts.					
	No. 1.	Nos. 2 and 3.	No. 4.	No. 5.	No. 6.	Total.
1907.						
July	5	4	2	0	0	11
August	4	1	4	1	0	10
September	6	11	21	28	11	77
October	11	7	26	47	18	109
November	1	5	12	45	19	82
December	4	11	20	47	21	103
1908.						
January	8	4	19	40	19	90
February	2	10	16	39	21	88
March	9	3	127	59	23	221
April	13	6	93	41	32	185
May	35	8	60	59	19	181
June	11	7	46	44	33	141
Total	109	77	446	450	216	1,298

Number of orders canceled or disapproved.

Month issued.	Sanitary engineering division.	Health districts.					
		No. 1.	Nos. 2 and 3.	No. 4.	No. 5.	No. 6.	Total.
1907.							
July	14	0	1	6	3	0	24
August	8	0	0	3	3	0	14
September	4	1	0	0	113	0	118
October	11	0	0	0	0	0	11
November	8	0	1	0	0	0	9
December	3	2	0	0	0	0	5
1908.							
January	17	3	0	1	0	0	21
February	2	0	0	0	0	0	2
March	7	0	1	0	1	0	9
April	5	0	0	0	0	0	5
May	0	0	0	0	0	0	0
June	1	0	0	0	0	0	1
Total	80	6	3	10	120	0	219

Number of orders not completed.

Month issued.	Sanitary engineering division.	Health districts.					
		No. 1.	Nos. 2 and 3.	No. 4.	No. 5.	No. 6.	Total.
1907.							
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	0	0	1	0	0	1
1908.							
January	15	0	0	0	0	0	15
February	9	0	0	0	0	0	9
March	9	0	0	0	0	1	10
April	7	21	1	0	0	0	29
May	29	13	0	0	0	0	42
June	64	0	0	3	0	0	67
Total	133	34	1	4	0	1	173

Personal of the Sanitary Engineering Division.

Month.	Engineers.	Inspectors.	Clerks.	Draftsmen.	Employees.	Messengers.	Total.
1907.							
July	1	2	1	1	1	1	7
August	1	3	1	1	1	1	8
September	1	1	1	1	1	1	6
October	1	1	1	1	1	1	6
November	1	2	1	1	1	1	7
December	1	2	1	1	1	1	7
1908.							
January	1	1	1	1	1	1	6
February	1	1	1	1	1	1	6
March	1	1	1	1	1	1	6
April	1	1	1	1	1	1	6
May	1	1	1	1	1	1	6
June	1	2	1	1	1	1	7

STATISTICS FOR SAN LAZARO HOSPITALS DIVISION.

Report of sick.

Patients in hospital July 1, 1907	308
Patients admitted during year	934
Patients discharged during year	670
Patients transferred during year	13
Patients died during year	207
Patients escaped during year	5
Patients remaining in hospital June 30, 1908	347

Average number of patients treated per day.

July, 1907	309.32	January, 1908	319
August, 1907	305.45	February, 1908	376.3
September, 1907	308.53	March, 1908	403.19
October, 1907	315.16	April, 1908	375.53
November, 1907	317.93	May, 1908	335.64
December, 1907	313.67	June, 1908	348.46

General average for year, 335.68.

Average cost of subsistence per patient per day.

July, 1907	₱0.346	January, 1908	₱0.356
August, 1907	.341	February, 1908	.354
September, 1907	.335	March, 1908	.363
October, 1907	.344	April, 1908	.358
November, 1907	.352	May, 1908	.366
December, 1907	.384	June, 1908	.318

General average for year, ₱0.351.

SAN LAZARO HOSPITALS.

Cholera department, San Lazaro Hospitals.

Month.	In hospital July 1, 1907.		Admitted.		Discharged, not cholera.		Discharged cured.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1907.												
July	------	------	2	1	0	0	0	0	2	0	0	1
August	------	------	2	0	1	0	0	1	1	0	0	0
September	------	------	16	12	0	1	1	1	12	7	3	3
October	------	------	21	9	0	0	11	5	11	6	2	1
November	------	------	4	4	3	0	2	0	3	3	0	0
December	------	------	12	6	0	1	1	0	4	4	7	1
1908.												
January	------	------	48	29	3	0	22	10	27	18	3	2
February	------	------	8	2	3	0	6	3	2	1	0	0
March	------	------	2	1	1	1	0	0	1	0	0	0
April	------	------	0	0	0	0	0	0	0	0	0	0
May	------	------	1	0	0	0	0	0	1	0	0	0
June	------	------	12	1	7	1	0	0	3	0	2	0
Total	------	------	128	65	18	4	43	20	67	39	[1] 2	0

Race.	In hospital July 1, 1907.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	------	------	9	3	9	2	0	1	0	0
Filipinos	------	------	110	60	45	22	64	37	2	0
Chinese	------	------	0	0	0	0	0	0	0	0
Others	------	------	9	2	6	1	3	1	0	0
Total	------	------	128	65	60	25	67	39	[1] 22	0

[1] Not cholera.

Insane department, San Lazaro Hospitals.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital at last report	5	------	2	------	65	16	2	------	2	------	92
Admitted	6	------	------	------	60	12	1	------	3	------	82
Discharged	10	------	------	------	12	3	------	------	2	------	27
Died	------	------	------	------	14	2	------	------	1	------	17
Transferred	------	------	------	------	2	3	------	------	------	------	5
Remaining	1	------	2	------	97	20	3	------	2	------	125

Race.	In hospital July 1, 1907.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	5	------	6	------	10	------	------	------	1	------
Europeans	2	------	------	------	------	------	------	------	2	------
Filipinos	65	16	60	12	14	6	14	2	97	20
Chinese	2	------	1	------	------	------	------	------	3	------
Others	2	------	3	------	2	------	1	------	2	------
Total	76	16	70	12	26	6	15	2	106	20

Leper department, San Lazaro Hospitals.

Status.	Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	
In hospital at last report	126	88	2		216
Admitted	13	6	2		21
Discharged		1	2		3
Died	22	15			37
Transferred	2				2
Escaped		3			3
Remaining	115	75	2		192

Race.	In hospital July 1, 1907.		Admitted.		Discharged.		Died.		Escaped.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans												
Europeans												
Filipinos	126	88	13	6	2	1	22	15		3	115	75
Chinese	2		2		2						2	
Others												
Total	128	88	15	6	4	1	22	15		3	117	75

Plague department, San Lazaro Hospitals.

One patient (Chinese, male) was admitted in July, 1907, and died. This case ocurred on board the steamship *Ferd Laeisz.*

Smallpox department, San Lazaro Hospitals.

Month.	In hospital July 1, 1907.		Admitted.		Discharged, not smallpox.		Discharged cured.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1907.												
July			3	1	2		1					1
August			6				5	1	1	1		
September			4				2		1		1	
October			3		1		3					
November			6		1		4				1	
December			3				4					
1908.												
January			6				2				4	
February			1	2			5	2			1	
March			19	13			5	1	4	1	11	11
April			36	23		1	28	20	4	7	15	5
May			22	24			20	18	7	9	10	7
June			16	12			21	9	13	5	2	5
Total			125	75	4	1	100	46	20	22	2	5

NOTE.—Over 40 cases, varioloid are included.

Opium habit deparment, San Lazaro Hospitals.

Status.	Chinese.	Filipinos.	Others.	Total.
In hospital at last report				
Admitted	383	17	1	401
Recovered	365	14	1	380
Improved	18	3		21
Not improved				
Remaining	18	3		21

Race.	In hospital July 1, 1907.	Admitted.	Recovered.	Improved.	Remaining.
Chinese		383	365	18	18
Filipinos		17	14	3	3
Others		1	1		
Total		401	380	21	21

Miscellaneous department, San Lazaro Hospitals.

Diseases.	In hospital July 1, 1907.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Tetanus			5	1	2		3	1		
Measles			16	9	16	9				
Diphtheria			3	2	2	1	1	1		
Total			14	12	20	10	4	2		

San Lazaro Morgue report.

	Number of bodies.
Remaining from last year (skeletons)	4
Buried:	
Leprosy	39
Cholera	364
Smallpox	75
Tetanus	5
Violence	15
Diphtheria	5
Bubonic plague	[a]1
Typhoid	4
Human bones	2
Other causes of death	70
Total	584
Dropped:	
Cremated	21
Buried by family	182
Buried by city	368
Turned over to the naval authorities	1
Turned over to R. V. Dell for burial	9
Transferred to Malecon Morgue	7
Buried by Chinese Club	1
Total	584

Number of autopsies held, 168.

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[a] This case occurred on board the steamship *Ferd Laeisz*.

STATEMENT OF EXPENDITURES.

The following statement shows the expenditures made during the fiscal year 1908 chargeable against the appropriation made by Act No. 1679 for the Bureau of Health during that period:

Amount appropriated	₱1,280,000.00	
Allowed by Secretary of the Interior to be expended from receipts to the Bureau of Health	88,000.00	
Total		₱1,368,000.00
Expenses chargeable as follows:		
General:		
Salaries and wages	109,608.42	
Transportation in Manila	15,446.82	
Photographs	231.15	
Commutation of leave	12,416.32	
Traveling expenses, employees	5,068.44	
Repairs	77.70	
Stationery	2,398.39	
Printing	15,385.79	
Postage and telegrams	2,296.56	
Periodicals	96.74	
Cablegrams	244.23	
Incidentals	1,689.50	
New furniture	575.76	
Miscellaneous, property division	17,011.54	
Rent, sanitary stations	220.00	
Post-office box	32.00	
Telephone rent	865.94	
Incidentals, sanitary stations	1,614.00	
Disinfecting apparatus	3,382.63	
Central Free Dispensary	1,527.03	
Asilo de San Vicente de Paul	1,328.25	
Colegio de Santa Isabel	4,305.26	
Hospicio de San José	40,191.05	
Medicines, indigent persons	3,376.19	
Transportation of freight	1,469.69	
Board of examiners	721.83	
Incidentals, Central Free Dispensary	251.47	
		241,832.70
Emergency fund:		
Salary	1,924.57	
Serum	223.75	
		2,148.32
Inspection division:		
Salaries and wages	97,906.76	
Traveling expenses	7,222.50	
		105,129.26
Prison sanitation division:		
Salaries and wages	7,274.31	
Medicines and medical supplies and disinfectants	6,853.08	
		14,127.39

Culion leper colony division:		
Salaries and wages	₱18,520.05	
Subsistence, lepers	43,304.24	
Subsistence, employees	10,908.33	
Equipment, kitchen	251.05	
Equipment, hospital	2,431.85	
Medicines and medical supplies	672.33	
Stationery and office supplies	2.20	
Fuel, etc	909.07	
Construction	18,012.72	
Incidentals	485.06	
Gratuity to lepers	7,002.20	
Bedding, towels, etc., lepers	8.45	
Clothing	1,658.34	
		₱104,165.89
Collection of lepers		16,409.01
Benguet Sanitarium division:		
Salaries and wages	7,003.54	
Subsistence	3,394.41	
Medicines and surgical supplies	650.51	
Hospital equipment	2,765.70	
Incidentals	485.28	
Laundry	413.40	
Fuel	571.46	
		15,284.30
San Lazaro Hospitals division:		
Salaries and wages	37,755.91	
Subsistence	44,634.04	
Medicines	2,678.78	
Shoeing ponies, and forage	722.14	
Telephone rent	173.25	
Lights	3,152.50	
Bedding	470.80	
Soap	1,120.42	
Incidentals	2,985.22	
Cigarettes, tobacco, etc	191.47	
Gratuity to lepers	1,938.40	
Clothing, lepers	1,167.42	
New furniture	138.60	
Transportation	9.00	
Towels	63.80	
Fuel	1,531.90	
		98,733.65
Civil Hospital division:		
Salaries and wages	53,498.11	
Subsistence	48,980.71	
Coal and oil	869.05	
Rent of buildings	10,299.93	
Telephone	260.41	
Laundry	6,560.16	
Lights	4,153.26	
Medicines and surgical supplies	5,471.50	

Civil Hospital division—Continued.		
Repairs	₱1,000.01	
Miscellaneous general supplies	5,546.77	
Incidentals	289.23	
Forage and horseshoeing	501.00	
Extra transportation	2.00	
		₱137,441.14
Vaccinating division:		
Salaries and wages	54,254.21	
Antiseptic supplies and dressings	4,675.36	
Vaccine virus	26,304.20	
Ice for virus	408.54	
Traveling expenses for vaccinators	4,837.07	
		90,479.58
Grand total		825,751.24

In addition to the foregoing statement of actual expenditures made from funds appropriated by Act No. 1679, there are the following outstanding obligations chargeable to the appropriation of the Bureau and funds appropriated for same during the fiscal year 1908:

General:		
Salaries and wages	₱63.67	
Transportation in Manila	1,433.00	
Photographs	.60	
Traveling expenses, employees	1,837.19	
Stationery	151.82	
Postage and telegrams	136.80	
Incidentals	1,288.21	
Miscellaneous, property division	12.21	
Rent, sanitary stations	20.00	
Telephone rent	87.40	
Disinfectants and apparatus	148.50	
Central free dispensary	82.19	
Asilo de San Vicente de Paul	120.75	
Colegio de Santa Isabel	325.00	
Hospicio de San José	3,572.90	
Medicines, indigent persons	50.95	
Transportation of freight	642.81	
Board of examiners	704.00	
Incidentals, central free dispensary	85.04	
		₱10,763.04
Emergency fund:		
Salary	165.00	
Serum	16.50	
		181.50
Inspection division:		
Salaries and wages	6,499.97	
Traveling expenses	4,379.91	
		10,879.80
Prison sanitation division: Medicines and medical supplies and disinfectants		896.97

Culion leper colony division:		
Salaries and wages	₱950.00	
Subsistence, employees	3,651.35	
Equipment, kitchen	198.49	
Equipment, hospital	2,794.67	
Medicines and medical supplies	2,268.38	
Fuel, etc	330.00	
Construction	15,620.31	
Incidentals	1,166.36	
Gratuities to lepers for	2,216.60	
Bedding, towels, etc., for lepers	661.20	
Clothing	2,853.53	
Freight	353.55	
		₱33,064.44
Collection of lepers		36,243.00
Benguet sanitarium division:		
Salaries and wages	771.00	
Subsistence	1,333.06	
Medicines and surgical supplies	2,280.49	
Hospital equipment	1,415.84	
Incidentals	148.48	
Laundry	30.60	
Fuel	40.00	
		6,019.47
San Lazaro Hospitals division:		
Salaries and wages	203.33	
Subsistence	3,414.22	
Medicines	191.99	
Shoeing ponies and forage	90.90	
Telephone rent	15.75	
Lights	303.30	
Bedding	391.50	
Soap	108.79	
Incidentals	1,852.10	
Cigarettes, tobacco	68.20	
Gratuity to lepers	124.20	
New furniture	56.63	
Transportation	8.00	
Towels	1.70	
Fuel	1,210.80	
		8,041.41
Civil Hospital division:		
Salaries and wages	255.00	
Subsistence	4,013.15	
Coal and oil	138.00	
Rent of buildings	872.50	
Telephone	26.00	
Laundry	560.67	
Lights	460.80	
Medicines and surgical supplies	1,658.53	
Repairs	77.83	
Miscellaneous general supplies	587.80	
Forage and horseshoeing	4.50	
Extra transportation	70.05	
		8,724.83

Vaccinating division:		
Salaries and wages	₱3,959.00	
Antiseptic supplies and dressings	693.30	
Vaccine virus	1,401.50	
Ice for virus	39.25	
Traveling expenses, vaccinators	4,234.82	
		₱10,327.87
Total		125,142.33

The following amounts as credits to this appropriation were collected during the year:

Refund by provinces of salaries of district health officers	₱52,563.41	
Sales of medicines, demijohns, empty vaccine tubes, refund of transportation of Dr. Swezy, etc	3,004.16	
Miscellaneous collections:		
San Lazaro Hospital	1,196.25	
Culion leper colony	1,037.79	
Civil Hospital	24,991.70	
Baguio Hospital	4,802.00	
		₱87,595.31
Total expenditures for fiscal year 1908		825,751.24
Total liabilities		125,142.33
Total		950,893.57
Balance from appropriation fiscal year 1908		417,106.43
Balance fiscal year 1907		159,134.74
Total available		576,241.17

CHOLERA STATISTICS.

[Taken from paper by Dr. Victor G. Heiser, published in Philippine Journal of Science April, 1908, and brought up to date.]

Cases and deaths from cholera in the Philippine Islands from the beginning of the outbreak in 1902 to June 30, 1908.

Date.	Cases.	Deaths.
March 2, 1902, to March 8, 1904	166,252	109,461
March 8, 1904, to January 1, 1908	11,691	8,654
Total	177,943	118,115

Mortality, 74.03 per cent.

Cholera statistics arranged in the order in which the towns became infected.

JANUARY TO JULY, 1906.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
Jan. 3	Naic	Cavite	Jan. 24	Feb. 26	195
Jan. 3	Macabebe	Pampanga	May 21	June 28	97
Jan. 4	Abucay	Bataan	Jan. 16	Mar. 8	66
Jan. 4	Bulacan	Bulacan	Feb. 15	Mar. 2	19
Jan. 4	Noveleta	Cavite	Jan. 31	Feb. 3	58
Jan. 4	Calumpit	Bulacan	Jan. 15	June 29	65
Jan. 4	Malolos	do	Jan. 4	June 30	41
Jan. 4	Quingua	do	Jan. 11	June 30	88
Jan. 4	Imus	Cavite	Mar. 24	Apr. 5	36
Jan. 5	Hagonoy	Bulacan	Jan. 5	Mar. 8	33
Jan. 5	Lilio	La Laguna	Jan. 5	Jan. 6	2
Jan. 5	Magdalena	do	Jan. 5	Jan. 15	8
Jan. 5	Majayjay	do	Jan. 5	Jan. 15	2
Jan. 5	Paete	do	Jan. 12	Mar. 7	36
Jan. 5	Guagua	Pampanga	Jan. 17	Feb. 5	50
Jan. 5	San Luis	do	June 16	June 30	120
Jan. 5	Malabon	Rizal	Jan. 24	Feb. 1	27
Jan. 6	Tarlac	Tarlac	Jan. 30	Feb. 1	8
Jan. 8	San Roque	Cavite	Jan. 8	Jan. 8	1
Jan. 8	Santa Cruz	La Laguna	Jan. 12	June 30	15
Jan. 10	Balanga	Bataan	Apr. 12	Apr. 19	88
Jan. 11	Paombong	Bulacan	Jan. 11	Feb. 26	48
Jan. 11	Cabanatuan	Nueva Ecija	Jan. 11	Feb. 23	42
Jan. 12	Pila	La Laguna	Mar. 7	Mar. 7	2
Jan. 12	Baliuag	Bulacan	Jan. 31	Apr. 18	70
Jan. 12	Lubao	Pampanga	Jan. 25	May 24	56
Jan. 13	San Francisco de Malabon	Cavite	Feb. 2	Feb. 23	57
Jan. 13	Cavite	do	Jan. 26	June 30	20
Jan. 15	Nagcarlang	La Laguna	Jan. 15	Jan. 15	1
Jan. 16	Orion	Bataan	Feb. 21	Apr. 19	84
Jan. 16	Pagsanjan	La Laguna	Jan. 22	June 30	10
Jan. 16	Arayat	Pampanga	Apr. 26	Apr. 28	108
Jan. 16	San Fernando	do	Jan. 19	Mar. 31	5
Jan. 17	Bongabong	Nueva Ecija	Jan. 17	Jan. 17	1
Jan. 18	Camp Stotsenberg	Pampanga	June 18	June 18	2
Jan. 19	Candaba	do	Feb. 5	Mar. 10	49
Jan. 22	Angat	Bulacan	Jan. 27	Mar. 2	127
Jan. 22	Biñang	La Laguna	Jan. 22	Jan. 22	1
Jan. 22	Gapang	Nueva Ecija	Jan. 22	Feb. 20	36
Jan. 22	Apalit	Pampanga	Jan. 22	Feb. 27	59
Jan. 22	Calamba	La Laguna	Jan. 22	June 30	3
Jan. 25	Santa Maria	Bulacan	Jan. 27	Mar. 7	39
Jan. 25	Florida	Pampanga	Jan. 25	Jan. 25	1
Jan. 25	Mexico	do	Jan. 25	Mar. 20	2
Jan. 25	Santa Rita	do	Jan. 25	Feb. 26	8
Jan. 26	San Pedro Macati	Rizal	Jan. 26	June 28	8
Jan. 29	Maragondon	Cavite	Feb. 23	Mar. 10	70
Jan. 29	Angeles	Pampanga	Jan. 29	Jan. 29	1
Jan. 29	Bacolor	do	Feb. 20	Feb. 21	4
Jan. 30	Bocaue	Bulacan	Jan. 31	Feb. 20	14
Jan. 30	Indang	Cavite	Feb. 1	Feb. 13	24
Jan. 30	Peñaranda	Nueva Ecija	Jan. 30	Mar. 27	8
Jan. 30	Porac	Pampanga	Jan. 30	Jan. 30	1
Jan. 30	La Paz	Tarlac	Feb. 6	Feb. 10	10
Jan. 31	Orani	Bataan	Feb. 8	Mar. 16	35
Jan. 31	San Antonio	Nueva Ecija	Feb. 13	Mar. 26	7
Feb. 1	Pangil	La Laguna	Feb. 17	Feb. 17	4
Feb. 5	San Isidro	Nueva Ecija	Feb. 16	Feb. 26	8
Feb. 15	Bagac	Bataan	Feb. 15	Feb. 15	1
Feb. 15	Polo	Bulacan	Feb. 15	Feb. 16	8
Feb. 21	Guevara	Tarlac	Feb. 21	Feb. 26	9
Mar. 5	Siniloan	La Laguna	Mar. 5	June 27	142
Mar. 15	Bacoor	Cavite	Apr. 26	May 21	16
Mar. 19	Capas	Tarlac	Mar. 19	Mar. 19	1
Mar. 22	Mabitac	La Laguna	Mar. 22	Mar. 31	2
Apr. 16	Parañaque	Rizal	May 1	May 23	25
May 1	Pasay	do	June 9	June 20	4
May 29	Mariveles	Bataan	May 29	May 29	1
June 9	Pasig	Rizal	June 20	June 30	61
June 12	Antipolo	do	June 12	June 12	1
June 18	Tanay	do	June 23	June 30	145
June 20	San Felipe Neri	do	June 20	June 30	5
June 22	Nampaya	La Laguna	June 22	June 22	2
June 25	Cabuyao	do	June 25	June 29	2
June 26	Taytay	Rizal	June 26	June 28	10
June 28	Taguig	do	June 28	June 28	1
June 29	Bay	La Laguna	June 29	June 29	1
June 30	Fort McKinley	Rizal	June 30	June 30	1

Cholera statistics arranged in the order in which the towns became infected—Contd.

FISCAL YEAR 1906–1907.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
July 2	Pasig	Rizal	July 7	Sept. 9	108
July 2	Fort McKinley	do		Aug. 16	6
July 2	Pasay	do	July 7	Aug. 17	44
July 2	Tanay	do	July 29	Aug. 17	72
July 2	San Felipe	do		July 20	20
July 2	Lumbang	La Laguna		July 2	1
July 2	Santa Cruz	do	July 15	Oct. 31	182
July 2	Pagsanjan	do	July 15	Oct. 22	11
July 2	Pila	do	July 4	Aug. 30	49
July 2	Malolos	Bulacan	July 30	Aug. 22	145
July 2	Quingua	do			117
July 2	Cavite	Cavite	Aug. 31	Oct. 26	28
July 3	San Luis	Pampanga			105
July 3	Macabebe	do	July 8	Aug. 18	84
July 3	Mariquina	Rizal		Aug. 8	15
July 4	Hagonoy	Bulacan	July 15	Nov. 23	88
July 5	San Pedro Tunasan	Rizal		July 26	26
July 6	Lilio	La Laguna		July 10	2
July 6	Cabuyao	do	Aug. 16	Sept. 2	38
July 6	Calamba	do		Sept. 4	51
July 7	Bay	do		July 7	1
July 7	San Isidro	Nueva Ecija	Aug. 5	Sept. 8	70
July 7	Taguig	Rizal			43
July 7	Antipolo	do		July 27	3
July 7	Morong	do			22
July 8	Calumpit	Bulacan	Aug. 4	Oct. 1	55
July 8	Bulacan	do	July 15	Oct. 10	40
July 9	Polo	do	July 25	Sept. 22	82
July 9	Angat	do			101
July 9	Santa Rita	Pampanga	July 14		58
July 10	Bacolor	do		Sept. 1	281
July 10	Apalit	do		Sept. 1	55
July 10	Candaba	do			49
July 10	Guagua	do			164
July 10	Meycauayan	Bulacan	July 25		30
July 11	Baliuag	do	Aug. 2	Oct. 22	418
July 11	Paombong	do	July 11	Oct. 11	29
July 12	Santa Maria	do			85
July 12	Naic	Cavite	July 19	Oct. 15	63
July 13	Rosario	do	Aug. 22		10
July 13	Pañgil	La Laguna			5
July 13	Malabon	Rizal	July 25	Dec. 28	170
July 13	San Miguel	Bulacan	July 19	Sept. 29	81
July 14	Bocaue	do	July 14	Sept. 26	74
July 14	Angeles	Pampanga			7
July 14	Santa Rosa	La Laguna			54
July 16	Lubao	Pampanga			77
July 16	San Fernando	do			98
July 16	Santo Tomas	do		July 16	1
July 16	Rosales	Pangasinan			4
July 18	Bayambang	do			20
July 18	Imus	Cavite	July 25	Oct. 15	43
July 19	Biñang	La Laguna			22
July 19	Mexico	Pampanga		Nov. 15	17
July 20	Porac	do			17
July 20	Maragondon	Cavite	July 20	Aug. 18	5
July 20	San Juan de Guimba	Nueva Ecija		July. 20	2
July 21	Cabanatuan	do		Sept. 28	58
July 23	Pagbilao	Tayabas	July 29	Sept. 12	51
July 25	Arayat	Pampanga			58
July 26	Lucena	Tayabas	Aug. 22	Sept. 21	46
July 26	Tarlac	Tarlac	Aug. 5	Aug. 12	14
July 27	Binangonan	Rizal		Aug. 15	20
July 28	Bautista	Pangasinan	Aug. 15	Sept. 10	23
July 29	Peñaranda	Nueva Ecija	Aug. 3	Nov. 13	150
July 29	San Antonio	do	Aug. 4	Sept. 8	20
July 29	Laguimanoc	Tayabas		Aug. 4	7
July 29	Tiaong	do			8
July 30	Floridablanca	Pampanga			16
Aug. 2	Gapan	Nueva Ecija	Aug. 11	Oct. 27	189
Aug. 2	Aliaga	do		Sept. 26	218
Aug. 2	Majayjay	La Laguna			3
Aug. 3	Nagcarlang	do		Sept. 19	66
Aug. 3	Tayabas	Tayabas		Aug. 27	10
Aug. 3	Victoria	Tarlac	Sept. 8	Sept. 25	24

Cholera statistics arranged in the order in which the towns became infected—Contd.

FISCAL YEAR 1906-1907—Continued.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
Aug. 3	Caloocan	Rizal			37
Aug. 7	Siniloan	La Laguna			5
Aug. 7	Noveleta	Cavite			27
Aug. 12	Pozorrubio	Pangasinan		Aug. 12	1
Aug. 15	Baguio	Benguet		Aug. 15	1
Aug. 16	Sariaya	Tayabas		Oct. 14	10
Aug. 16	San Francisco de Malabon	Cavite		Sept. 30	4
Aug. 17	Dagupan	Pangasinan			2
Aug. 18	Orion	Bataan			7
Aug. 19	Calasiao	Pangasinan			1
Aug. 25	Pura	Tarlac	Aug. 30	Nov. 8	25
Aug. 25	Talavera	Nueva Ecija	Sept. 16	Oct. 12	108
Aug. 28	Camp Vicars	Moro			9
Sept. 1	Cabatuan	Iloilo	Oct. 2	Oct. 29	366
Sept. 8	Magdalena	La Laguna			5
Sept. 4	Iloilo	Iloilo	Sept. 12	Oct. 21	74
Sept. 11	Moncada	Tarlac		Sept. 12	2
Sept. 14	Binmaley	Pangasinan	Sept. 15		10
Sept. 16	Mabalacat	Pampanga			1
Sept. 18	Dumangas	Iloilo	Sept. 16	Oct. 31	210
Sept. 18	Molo	do			3
Sept. 18	Pavia	do	Sept. 25	Oct. 27	32
Sept. 18	La Paz	do	Sept. 25	Oct. 22	50
Sept. 18	Barotac Nuevo	do		Nov. 2	46
Sept. 19	Jaro	do	Sept. 28	Oct 18	58
Sept. 21	San Mateo	Rizal		Sept. 21	1
Sept. 21	Nabalas	Iloilo		Sept. 23	6
Sept. 23	Tayug	Pangasinan	Oct. 4	Oct. 15	14
Sept. 24	Los Baños	La Laguna			1
Sept. 25	Igbaras	Iloilo		Sept. 29	2
Sept. 25	Buenavista	do			4
Sept. 27	Miagao	do	Oct. 8	Nov. 8	294
Sept. 29	Guimbal	do			2
Oct. 4	Alimodian	do	Oct. 17	Nov. 5	275
Oct. 8	San Miguel	do	Oct. 17	Nov. 4	195
Oct. 8	Santa Barbara	do		Oct. 27	36
Oct. 8	Leon	do	Oct. 26	Nov. 2	33
Oct. 9	Janiuay	do	Oct. 11	Nov. 16	100
Oct. 9	Banate	do		Oct. 18	12
Oct. 20	Sual	Pangasinan			2
Oct. 27	Camiling	Tarlac	Nov. 3	Nov. 23	26
Oct. 28	Talisay	Occidental Negros		Nov. 19	4
Oct. 28	Silay	do		Dec. 11	7
Nov. 3	Dumarao	Capiz	Nov. 16	Jan. 18	86
Nov. 13	Laguan	Samar		Dec. 22.	1
Nov. 13	San Miguel	do			12
Nov. 13	Catubig	do			16
Nov. 22	Dao	Capiz		Jan. 8	15
Nov. 22	Pontevedra	Occidental Negros		Feb. 23	41
Dec. 1	Dumalag	Capiz		Jan. 8	31
Dec. 5	Jamindan	do	Jan. 22	Jan. 26	31
Dec. 8	Palapag	Samar		Mar. 23	42
Dec. 8	Laoang	do			4
Dec. 9	Panay	Capiz			35
Dec. 10	Jinigaran	Occidental Negros		Feb. 23	14
Dec. 23	Pambujao	Samar			3
Dec. 23	Capiz	Capiz		Feb. 16	23
Dec. 27	Tagabiran	Samar		Dec. 27	2
Jan. 2	Mambusao	Capiz	Jan. 11	Jan. 26	26
Feb. 13	Saravia	Occidental Negros		Feb. 20	9
Feb. 26	Sigma	Capiz		Jan. 29	2
Mar. 12	Pilar	Occidental Negros		Mar. 16	9
Mar. 23	Bacolod	do		Mar. 23	2
Apr. 7	Victoria	do		Apr. 29	15
	Parañaque	Rizal			25
	Pililla	do			28
	Navotas	do			140
	Bacoor	Cavite			13
	Indang	do			21
	Calauang	La Laguna			1
	Lingayen	Pangasinan			1
	Total number cases				7,086

Cholera statistics arranged in the order in which the towns became infected—Contd.

JULY 1, 1907, TO JUNE 30, 1908.

Date of first case.	Municipality.	Province.	Highest number of cases.	Date of last cases.	Total.
1907.					
July 22	Carigara	Leyte	Aug. 25	Sept. 8	86
Aug. 9	Mandaon	Masbate	Sept. 12	Oct. 4	53
Aug. 18	Bango	Leyte	Sept. 7	Sept. 18	10
Oct. 6	Baliuag	Bulacan	Nov. 15	Dec. 11	10
Nov. 3	Calumpit	do	Nov. 30	Dec. 7	16
Nov. 10	San Miguel	do	Dec. 6	Jan. 16	29
Nov. 14	Guagua	Pampanga	Dec. 14	Feb. 17	58
Nov. 14	Sexmoan	do	Dec. 8	Feb. 13	56
Nov. 19	Santa Rita	do	Nov. 19	Jan. 23	8
Nov. 26	Mexico	do	Nov. 26	(?)	2
Nov. 29	Apalit	do	(?)	Dec. 11	9
Nov. (?)	Bacolor	do	Feb. 7	Feb. 19	79
Nov. (?)	San Fernando	do	Dec. 12	Mar. 12	15
Nov. (?)	Macabebe	do	Dec. 6	Jan. 24	55
Nov. (?)	Betis	do	Jan. 26	Jan. 26	13
Nov. (?)	San Luis	do	Dec. 6	Dec. 6	2
Dec. 1	Orion	Bataan	Dec. 1	Dec. 4	2
Dec. 1	Lubao	Pampanga	Jan. 23	Feb. 2	47
Dec. 2	Paombong	Bulacan	Dec. 10	Jan. 27	20
Dec. 2	Quingua	do	Dec. 7	do	5
Dec. 2	Bulacan	do	Jan. (?)	Feb. 4	14
Dec. 2	Mabalacat	Pampanga	Dec. 2	Dec. 2	1
Dec. 3	Candaba	do	Dec. 3	Dec. 3	1
Dec. 4	Hagonoy	Bulacan	Jan. 24	Feb. 17	30
Dec. 4	Bocaue	do	Jan. 27	Jan. 31	34
Dec. 10	Balanga	Bataan	Dec. 10	Dec. 10	1
Dec. 23	Malolos	Bulacan	(?)	Feb. 27	18
Dec. —	Floridablanca	Pampanga	(?)	Jan. 30	8
Dec. —	Minalin	do	(?)	do	14
Dec. —	Caloocan	Rizal	(?)	Jan. 27	7
Dec. —	Malabon	do	(?)	do	2
1908.					
Jan.1-17	Pagsanjan	La Laguna	(?)	Jan.1-17	2
Jan.1-17	Angeles	Pampanga	(?)	do	3
Jan.1-17	Masantol	do	(?)	do	7
Jan.1-17	Antipolo	Rizal	(?)	do	4
Jan.1-17	Mariquina	do	(?)	do	64
Jan.1-17	Pasig	do	(?)	do	12
Jan.1-17	San Mateo	do	(?)	do	3
Jan.1-17	San Roque	do	(?)	do	1
Jan.1-17	Cainta	do	(?)	do	1
Jan. 17	Montalban	do	Jan. 17	Jan. 17	1
Jan. 23	Cavite	Cavite	Feb. 4	Feb. 17	20
Jan. 24	Santa Cruz	Laguna	Jan. 24	Jan. 24	1
Jan. 24	San Narciso	Zambales	Jan. 26	Mar. 11	76
Jan. 26	Bayambang	Pangasinan	June 28	June 30	98
Jan. 26	Bautista	do	June 22	do	155
Jan. 26	San Felipe	Zambales	Jan. 29	Feb. 27	141
Jan. 27	Navotas	Rizal	Jan. 27	Jan. 27	1
Jan. 27	Pasay	do	Feb. 3	Feb. 17	17
Jan. 29	Orani	Bataan	Feb. 20	Feb. 20	6
Jan. 30	San Juan del Monte	Rizal	Feb. 7	Feb. 7	7
Jan. 31	Abucay	Bataan	Jan. 31	Jan. 31	3
Jan. 31	Dinalupijan	do	do	do	11
Feb. 2	Parañaque	Rizal	Feb. 2	Feb. 19	5
Feb. 4	Villasis	Pangasinan	do	Apr. 20	4
Feb. 9	San Carlos	do	June 21	June 30	356
Feb. 9	San Felipe Neri	Rizal	Feb. 9	Feb. 28	5
Feb. 11	Malasiqui	Pangasinan	June 15	June 30	83
Feb. 13	Lubang	Mindoro	Feb. (?)	Feb. (?)	32
Feb. 16	Arayat	Pampanga	Feb. 16	Feb. 16	1
Feb. 17	Taguig	Rizal	Feb. 17	Feb. 19	1
Feb. 19	Dagupan	Pangasinan	May 29	June 30	423
Feb. 19	Tayug	do	June 29	June 29	14
Feb. 23	Calasiao	do	June 23	June 30	276
Feb. 25	San Roque	Cavite	Feb. 25	Feb. 25	2
Mar. 3	Botolan	Zambales	Mar. 3	Mar. 3	1
Mar. 8	San Antonio	do	Mar. 8	Mar. 8	2
Mar. 16	Moncada	Tarlac	Mar. 19	June 28	12
Mar. 22	Laspiñas	Rizal	Apr. 18	May 22	46
Mar. 31	Santo Tomas	Pangasinan	Mar. 31	Mar. 31	1
Apr. 1	Bacoor	Cavite	Apr. 8	Apr. 8	4
Apr. 5	San Nicolas	Pangasinan	Apr. 5	Apr. 5	3
Apr. 10	Mangatarem	do	Apr. 10	Apr. 10	1
Apr. 17	Luna	Union	Apr. 31	June 28	6
Apr. 19	Agno	Pangasinan	May 12	May 12	29
Apr. 20	Santa Barbara	do	May 7	May 15	41

Cholera statistics arranged in the order in which the towns became infected—Contd.

JULY 1, 1907, TO JUNE 30, 1908—Continued.

Date of first case.	Municipality.	Province.	Highest number of cases.	Date of last cases.	Total.
Apr. 27	Capiz	Capiz	June 1	June 26	223
May 1	Asingan	Pangasinan	May 27	June 29	83
May 5	Ibisan	Capiz	May 31	June 21	51
May 5	Mambusao	do	May 15	June 26	12
May 7	Lingayen	Pangasinan	June 10	June 10	22
May 10	Dao	Capiz	June 1	June 21	8
May 10	Dumalag	do	May 10	May 10	3
May 11	San Rafael	Bulacan	May 11	May 11	1
May 11	Binmaley	Pangasinan	May 27	May 27	8
May 11	Mangaldan	do	June 14	June 30	582
May 14	Panay	Capiz	June 1	do	226
May 20	Sual	Pangasinan	May 20	May 20	3
May 21	Pontevedra	Capiz	May 21	June 30	52
May 24	Balungao	Pangasinan	June 30	do	98
May 24	Pozorrubio	do	June 23	do	102
May 24	San Jacinto	do	June 8	June 29	123
May 27	Binalonan	do	June 17	do	189
May 27	Urdaneta	do	May 27	June 11	10
May 31	Sapian	Capiz	May 31	May 31	40
June 1	Panitan	do	June 10	June 26	46
June 5	Manaoag	Pangasinan	June 26	June 29	95
June 11	Baguio	Benguet	June 11	June 11	1
June 15	San Pablo	Laguna	June 15	June 15	1
June 15	San Fabian	Pangasinan	do	do	4
June 18	Santa Maria	Ilocos Sur	June 29	June 29	4
June 19	Agoo	Union	June 22	June 28	14
June 19	Cuyapo	Nueva Ecija	June 19	June 19	1
June 21	Alaminos	Pangasinan	June 21	June 21	1
June 21	Jamindan	Capiz	do	do	1
June 21	Pilar	do	do	do	2
June 22	San Manuel	Pangasinan	June 29	June 29	52
June 22	Bolinao	do	June 22	June 22	1
June 24	Santa Maria	Pangasinan	June 26	June 29	32
June 28	Santo Tomas	Union	June 30	June 30	10
June 29	Natividad	Pangasinan	June 29	June 29	4
June 30	Camiling	Tarlac	June 30	June 30	6
June 30	Tubao	Union	do	do	30
June 30	Aringay	do	do	do	2
	Grand total				4,772

Cases and deaths from cholera in the city of Manila, January 1, 1906, to January 1, 1907.

BY AGES.

Age.	Cases.	Deaths.	Mortality.	Age.	Cases.	Deaths.	Mortality.
Under 30 days	1	1	100	50 to 55 years	18	17	94.4
1 month to 2 years	39	36	92.3	55 to 60 years	22	22	100
2 to 5 years	121	116	95.9	60 to 65 years	5	5	100
5 to 10 years	54	50	92.6	65 to 70 years	11	11	100
10 to 15 years	56	43	76.8	70 to 75 years	2	1	50
15 to 20 years	97	75	77.3	75 to 80 years	3	3	100
20 to 25 years	112	96	85.7	80 to 85 years	1	0	0
25 to 30 years	113	100	97.4	85 to 90 years	2	2	100
30 to 35 years	71	57	80.3	Over 90 years			
35 to 40 years	61	55	90.2	Total	848	744	87.7
40 to 45 years	24	22	91.3				
45 to 50 years	35	32	91.4				

BY RACE.

Race.	Cases.	Deaths.	Mortality.	1 case to—	Date of last case.
Americans	12	9	75	488	Sept. 4, 1906
Filipinos	782	698	89.3	248	Nov. 17, 1906
Chinese	30	27	90	741	Oct. 12, 1906
Foreigners	24	10	41.7	189	Nov. 27, 1906

Cases and deaths from cholera in the city of Manila, January 1, 1907, to January 1, 1908.

BY AGES.

Age.	Cases.	Deaths.	Mortality.	Age.	Cases.	Deaths.	Mortality.
Under 30 days				35 to 40 years	21	20	95.23
1 month to 2 years	6	6	100	40 to 45 years	16	13	81.25
2 to 5 years	14	13	92.85	45 to 50 years	8	8	100
5 to 10 years	15	14	93.33	50 to 55 years	7	7	100
10 to 15 years	12	10	83.33	55 to 60 years	3	1	33.33
15 to 20 years	21	14	66.66	60 to 65 years	2	2	100
20 to 25 years	30	28	93.33	65 to 70 years	2	2	100
25 to 30 years	40	32	80				
30 to 35 years	26	24	92.30	Total	223	194	86.99

BY RACE.

Race.	Cases.	Deaths.	Mortality.	1 case to—	Date last case.
Americans	3	0	0.0	1,733	Oct. 17, 1907
Filipinos	212	186	87.7	921	Dec. 31, 1907
Chinese	4	4	100	4,507	Oct. 19, 1907
Foreigners	4	4	100	1,255	Oct. 9, 1907
Total	223	194	86.9	1,002	

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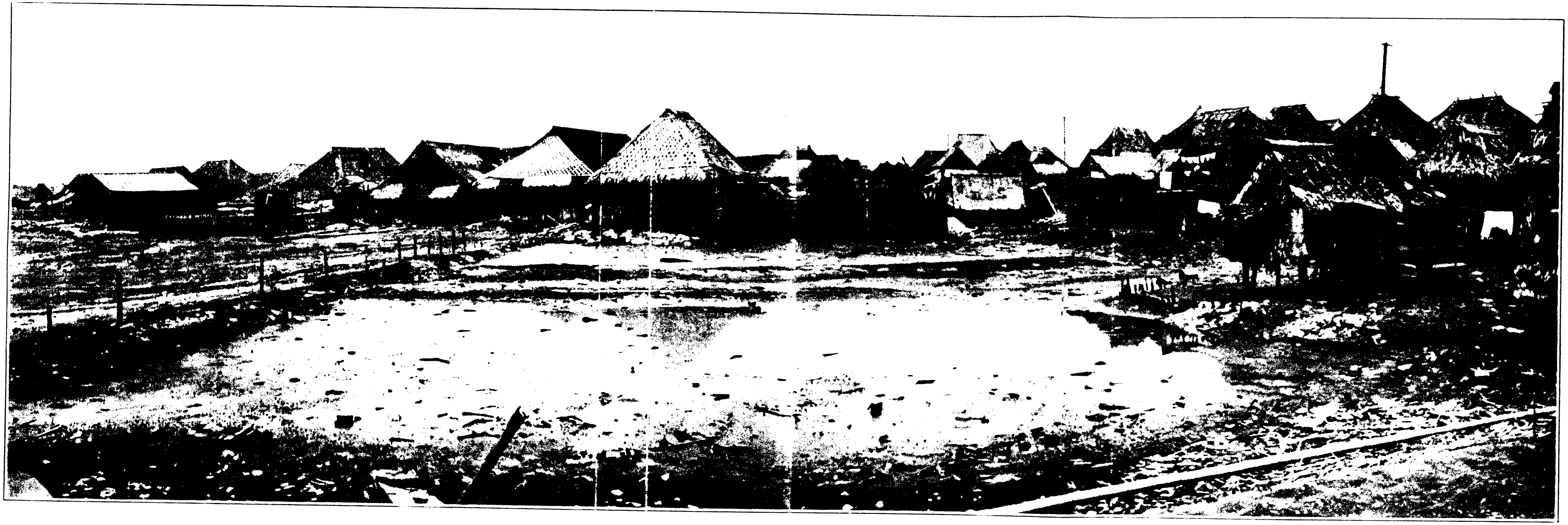
○

PARKING AN OLD INSANITARY MOAT

PLATE I.



MOSQUITO BREEDING GROUND, CALLE BANCUSAY, BELOW TIDE LEVEL.

PLATE II.

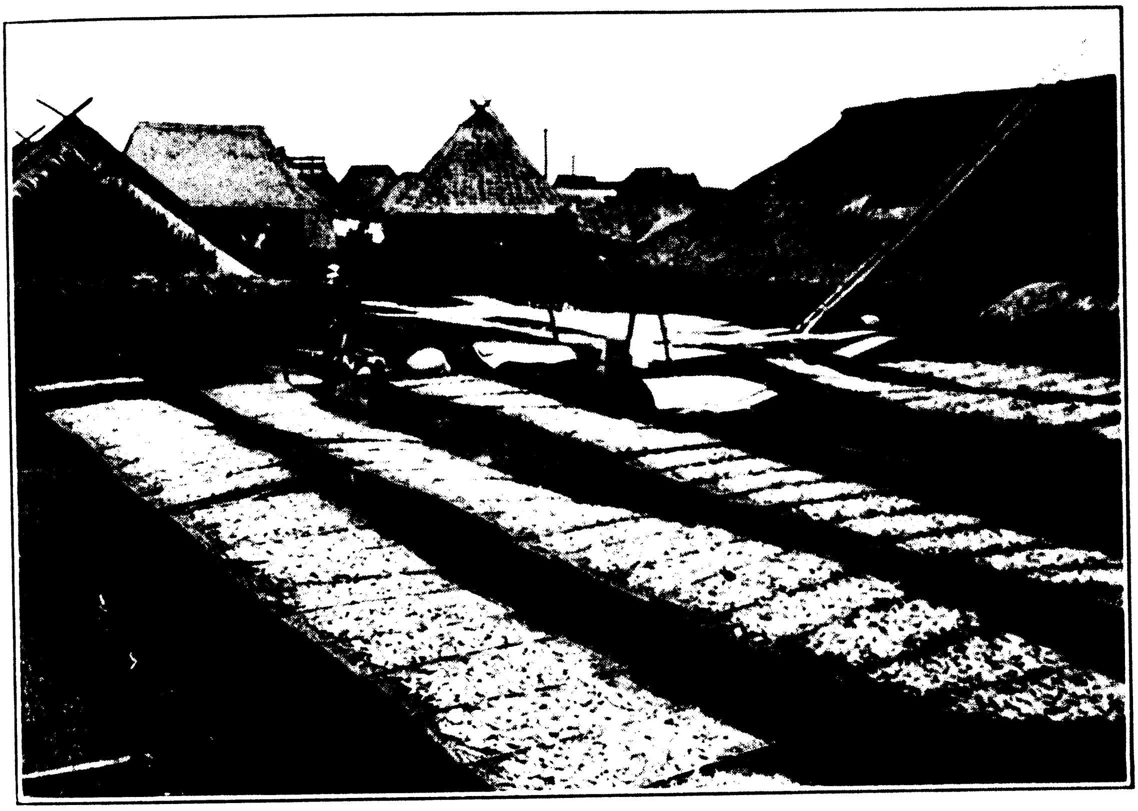


FIG. 1. FISH DRYING ESTABLISHMENTS, BARRIO OF BANCUSAY, TONDO.

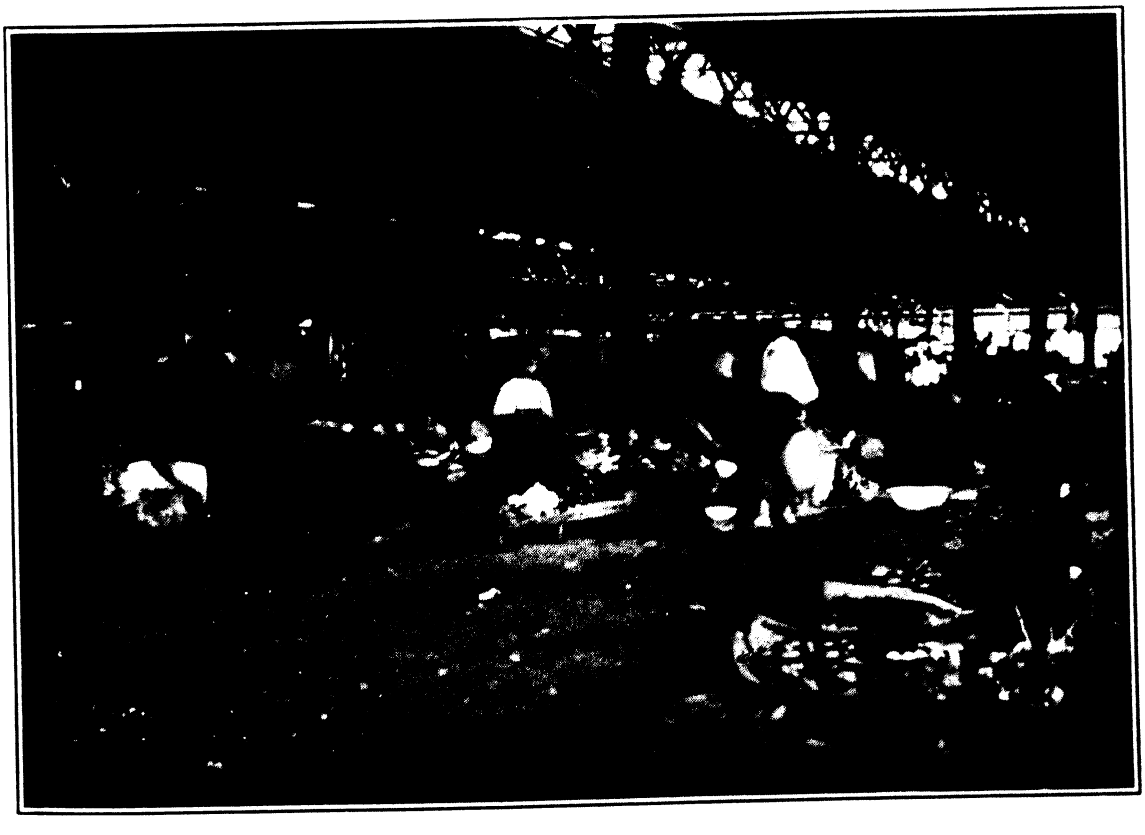


FIG. 2. INTERIOR OF QUINTA MARKET BEFORE IMPROVEMENTS WERE MADE.

PLATE III.

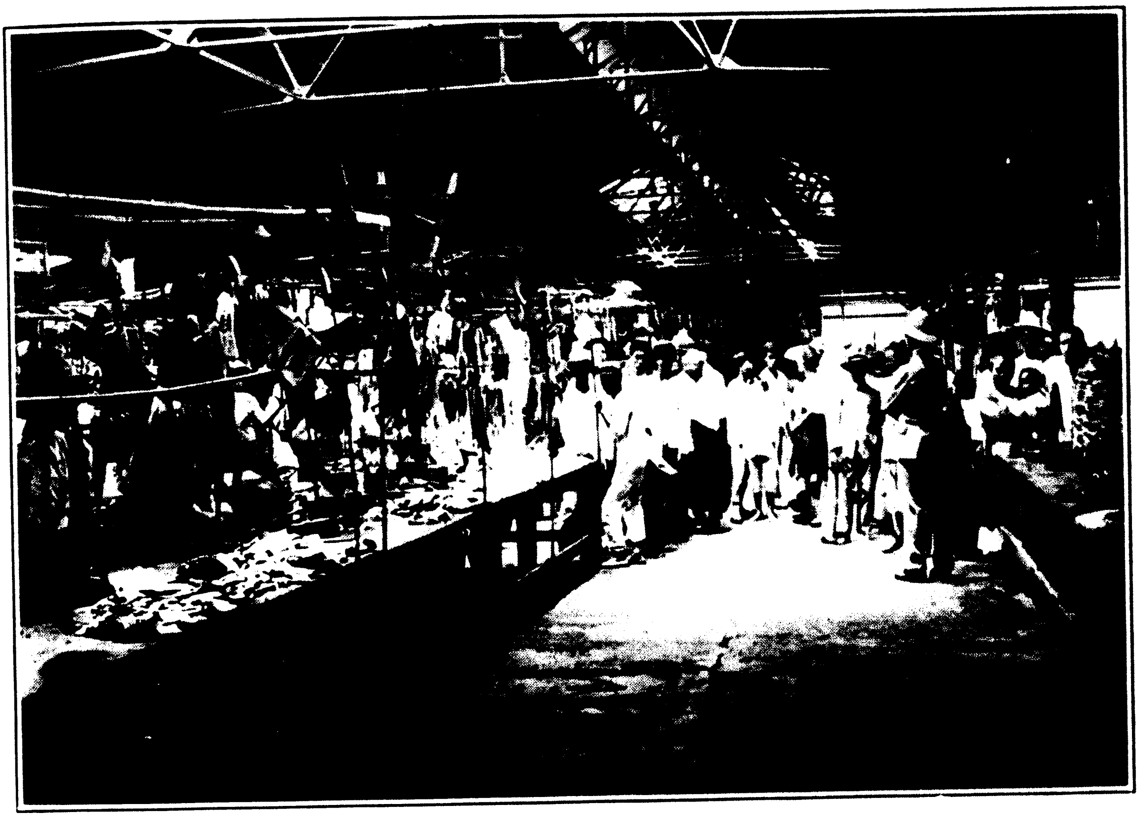


FIG. 1. INTERIOR OF QUINTA MARKET AFTER IMPROVEMENTS WERE MADE.

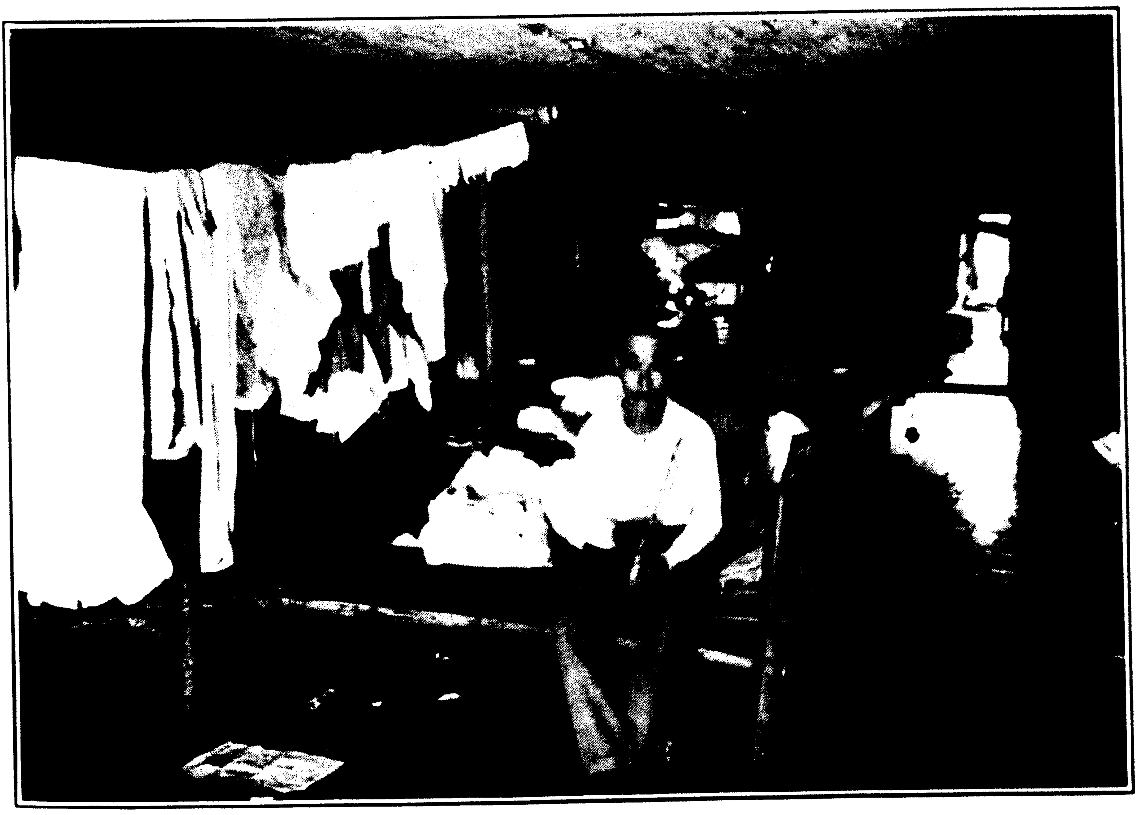
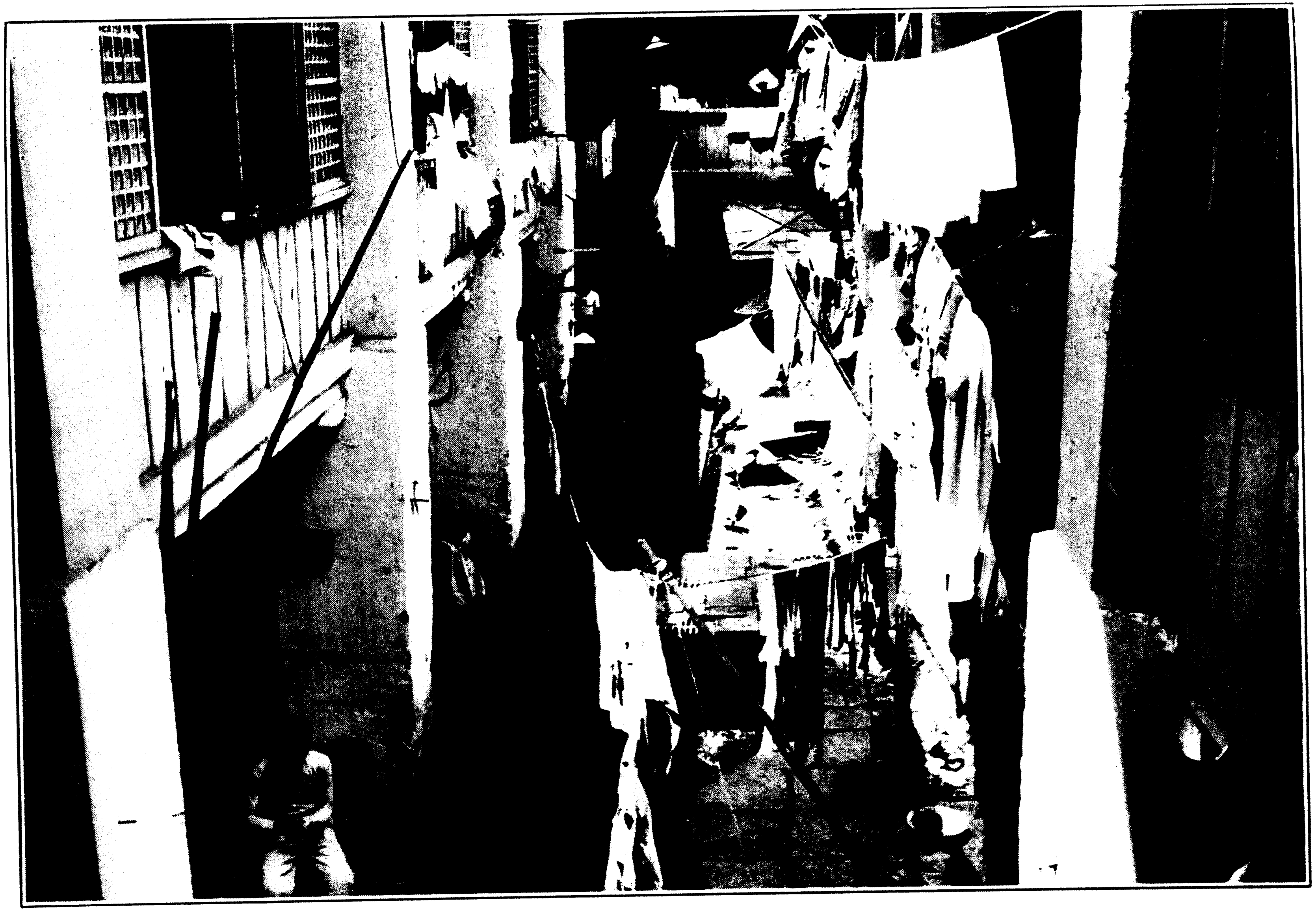


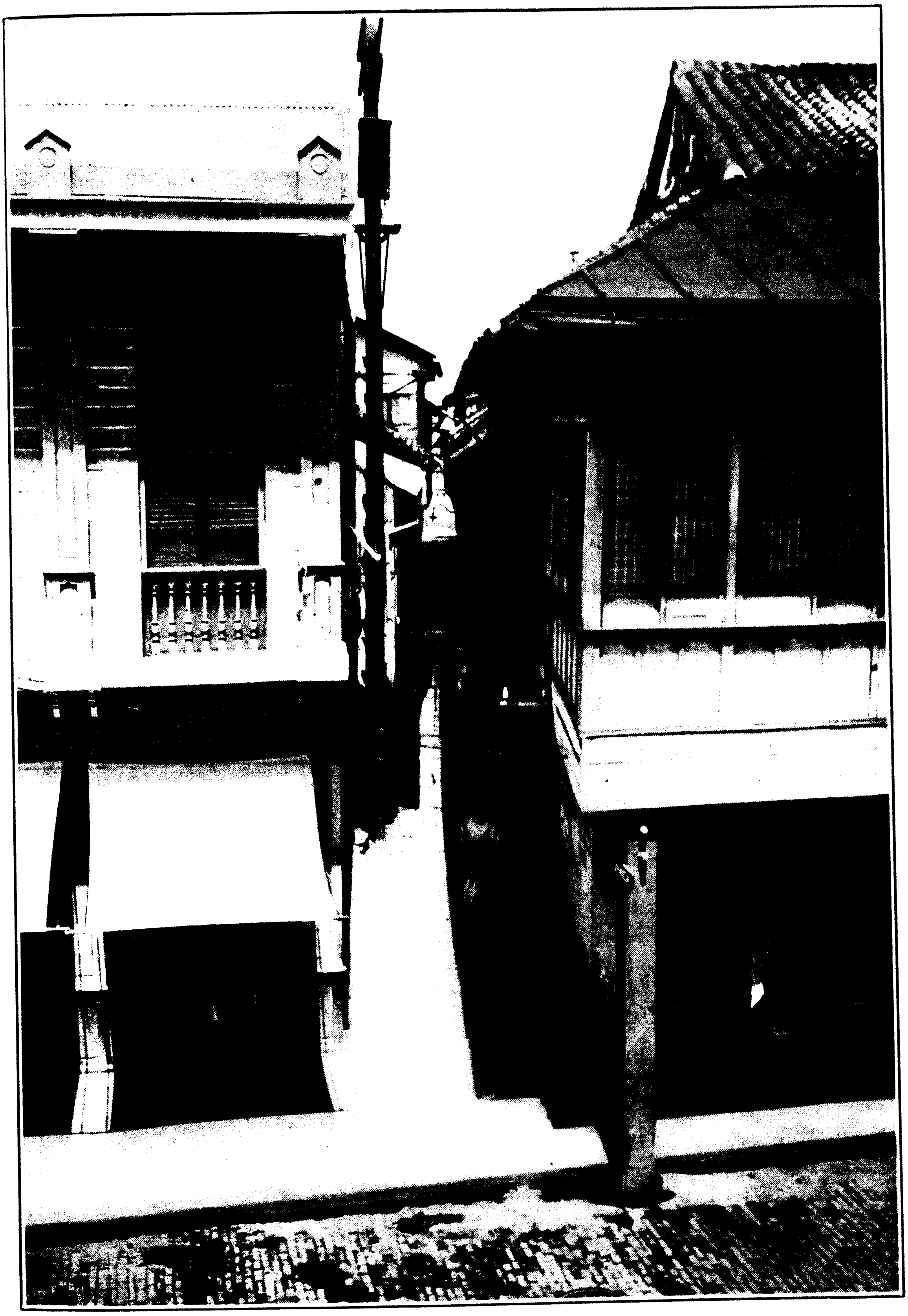
FIG. 2. CHINESE LAUNDRY, CALLE HERRAN.

PLATE IV.



INTERIOR TENEMENT HOUSE, CALLE MAGALLANES.

PLATE V.



CALLE HORMIGA (NARROW STREET).

PLATE VI.

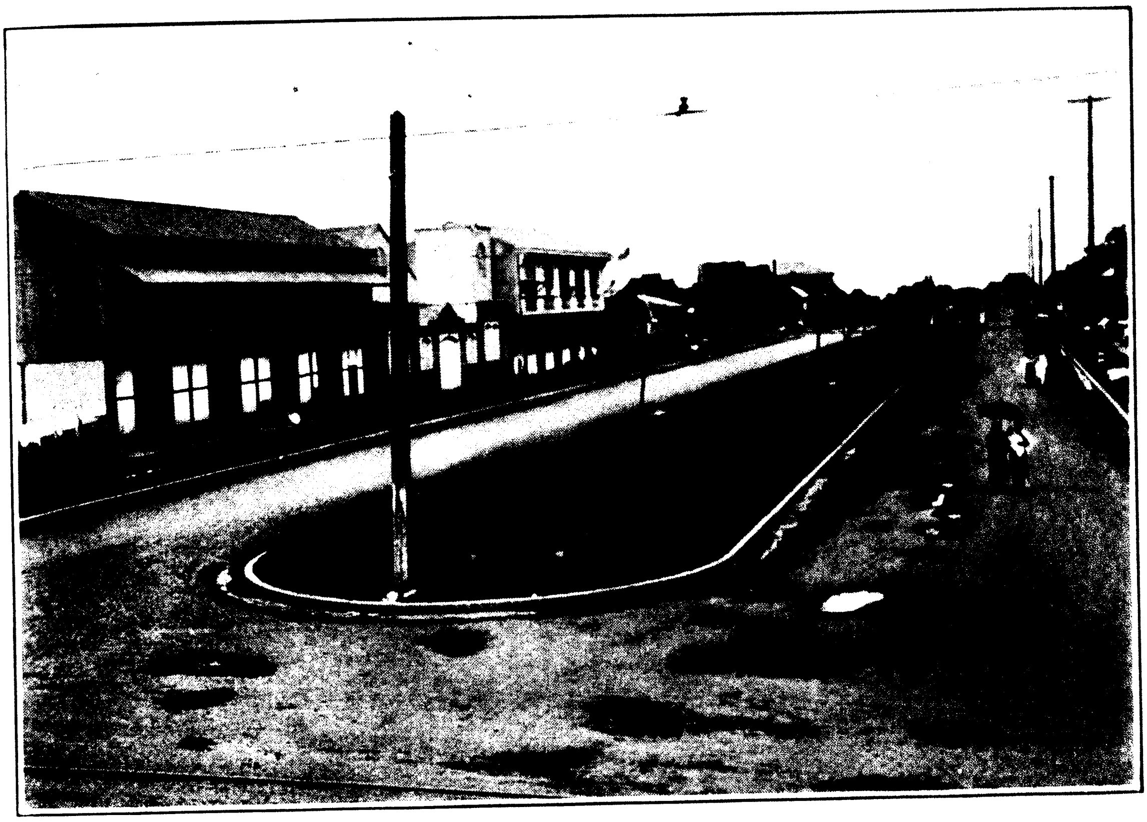


FIG. 1. CALLE MORIONES, TONDO (NEW WIDE STREET).

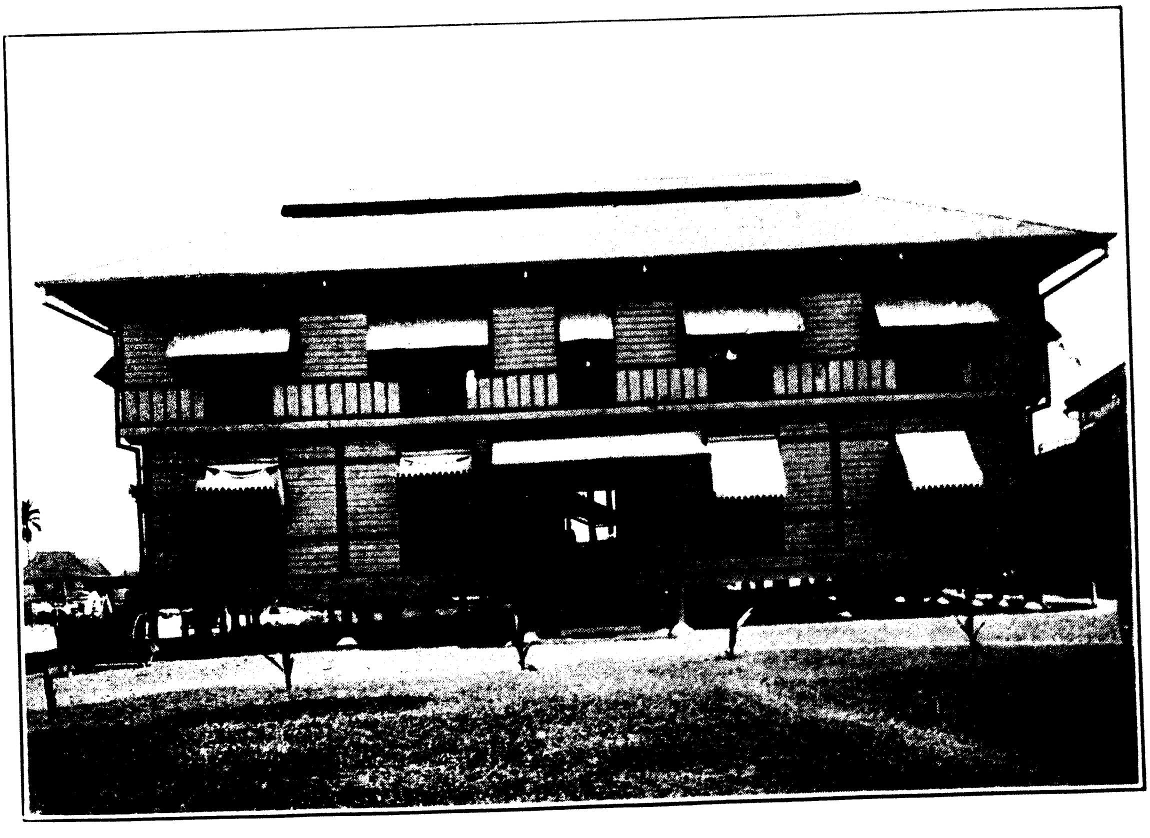


FIG. 2. UNIVERSITY HOSPITAL.

PLATE VII.

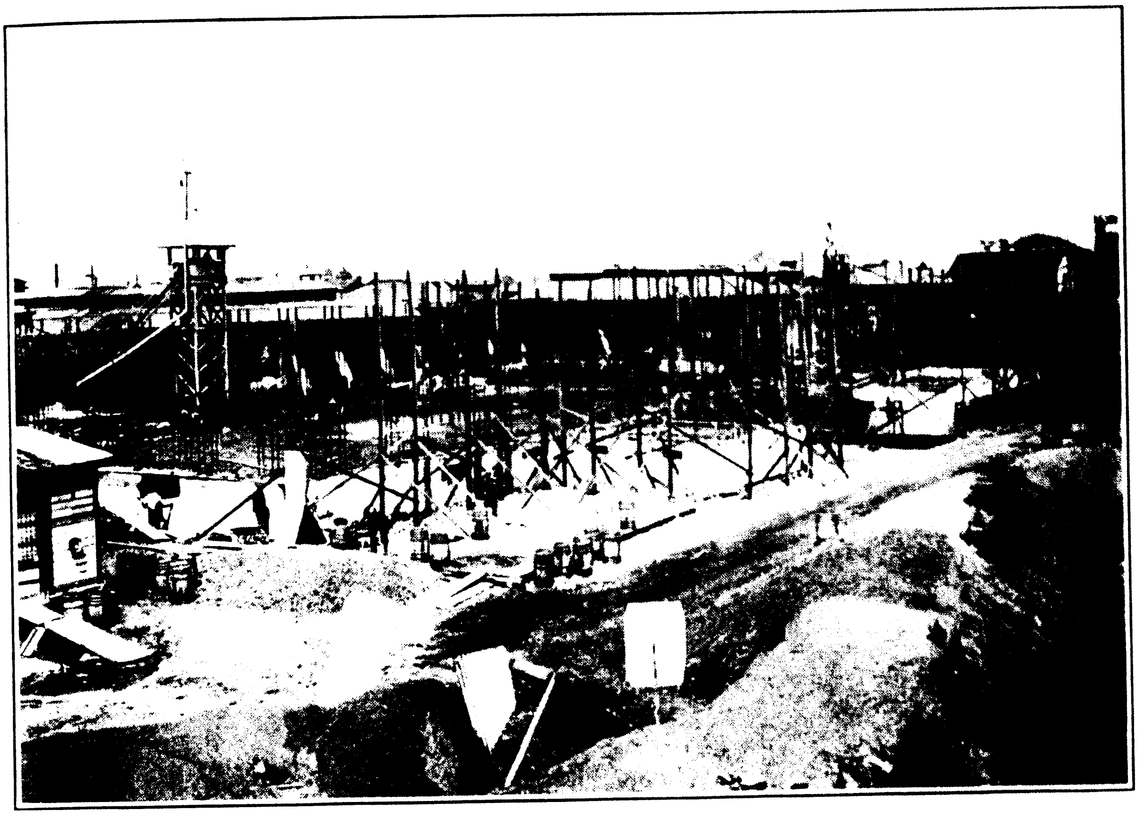


FIG. 1. NEW HOSPITAL IN PROCESS OF CONSTRUCTION, BILIBID PRISON.

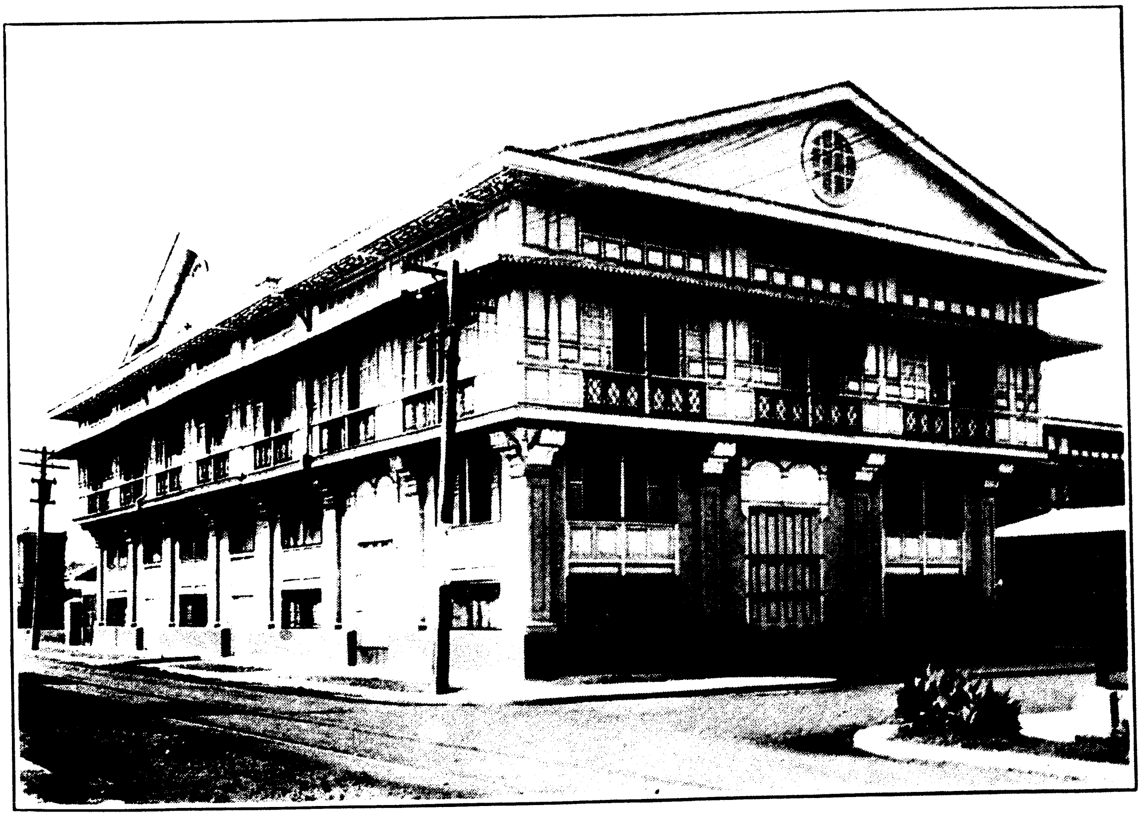


FIG. 2. GIRLS' DORMITORY AND NURSES' TRAINING SCHOOL, CALLE MERCADO.

PLATE VIII.

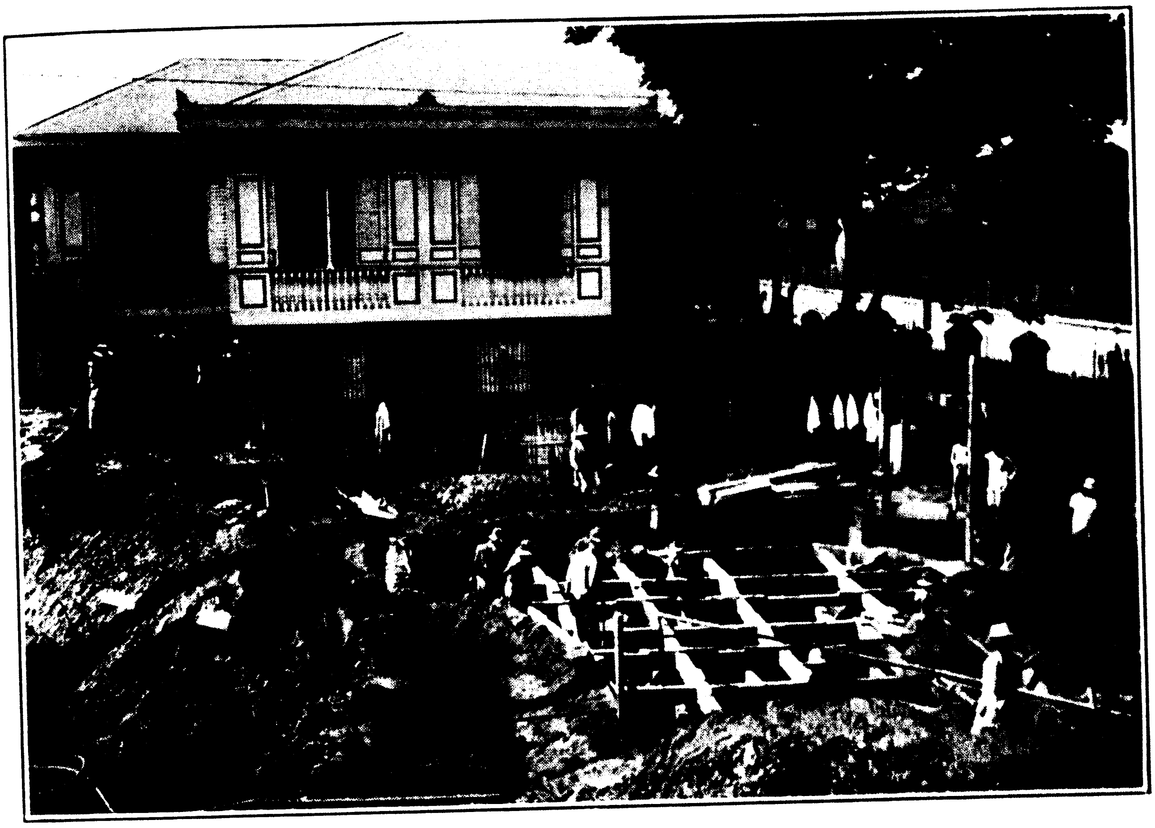


FIG. 1. SEWAGE PUMPING STATION, CALLE HERRAN.

(In process of construction.)

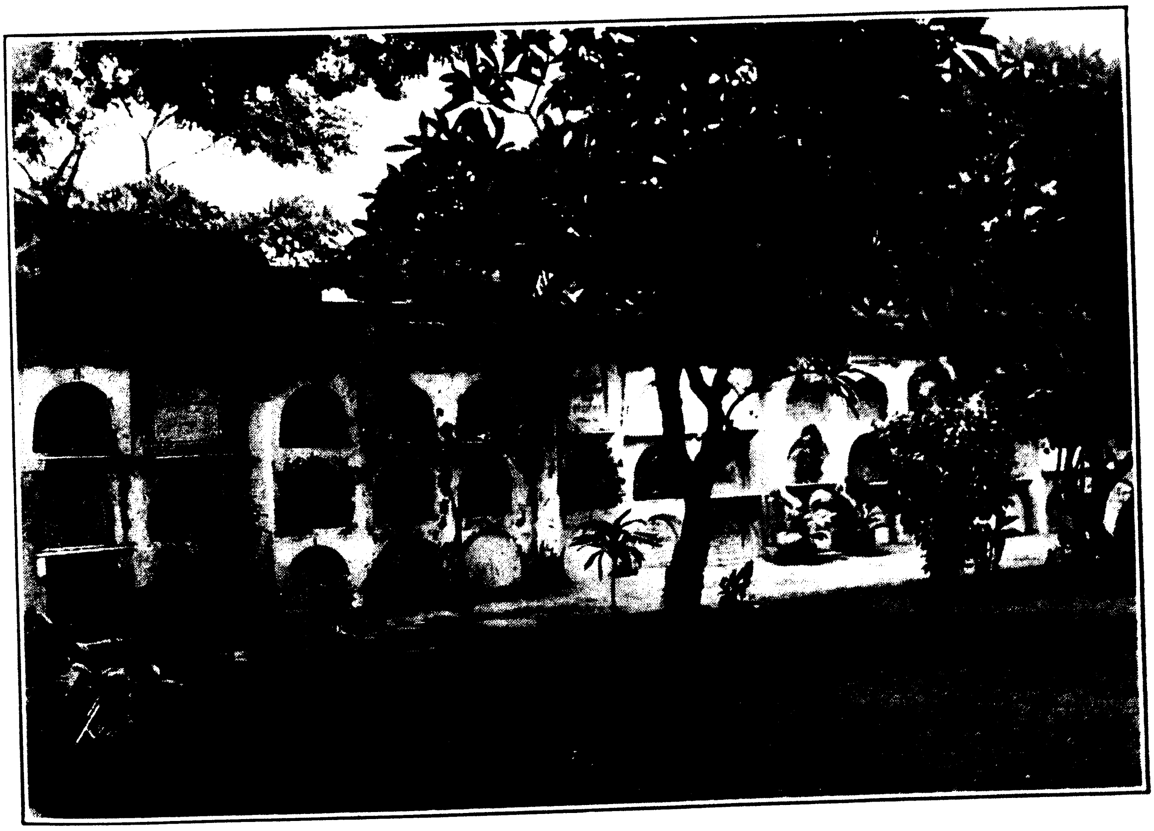


FIG. 2. NICHES, PACO CEMETERY.

PLATE IX.

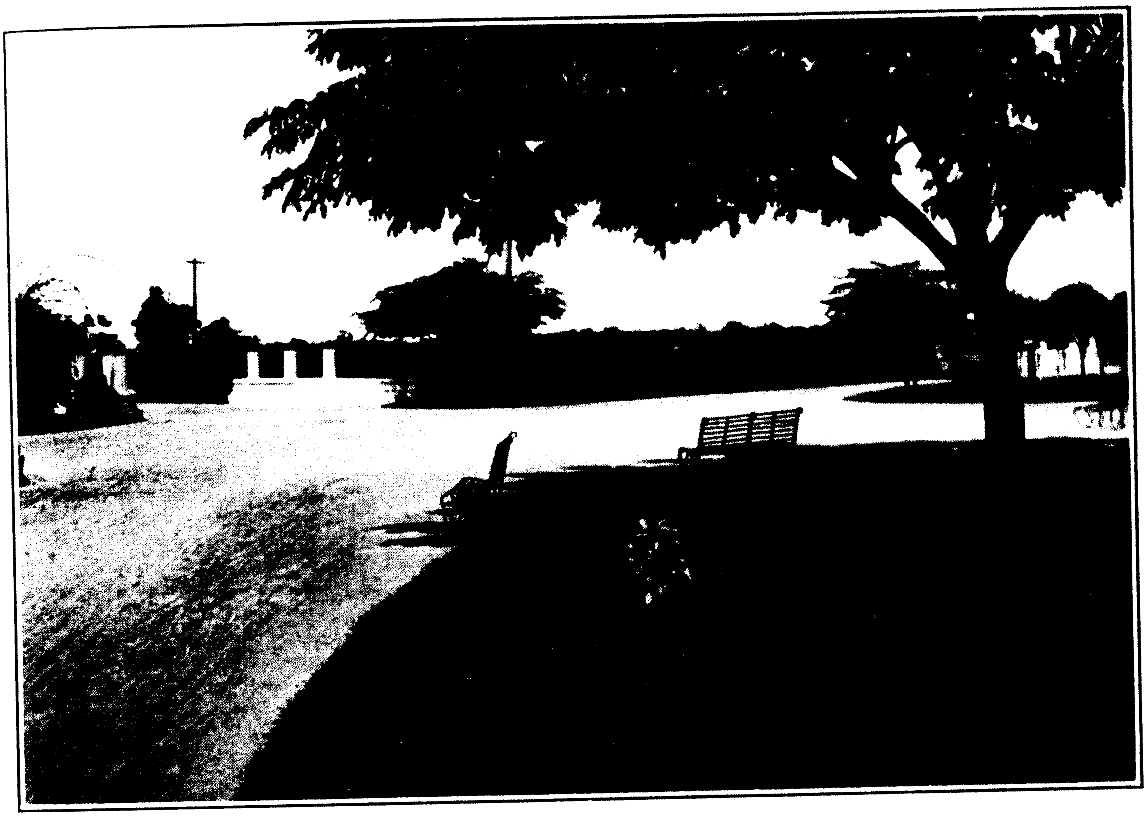


Fig. 1. DRIVEWAY, CEMENTERIO DEL NORTE.

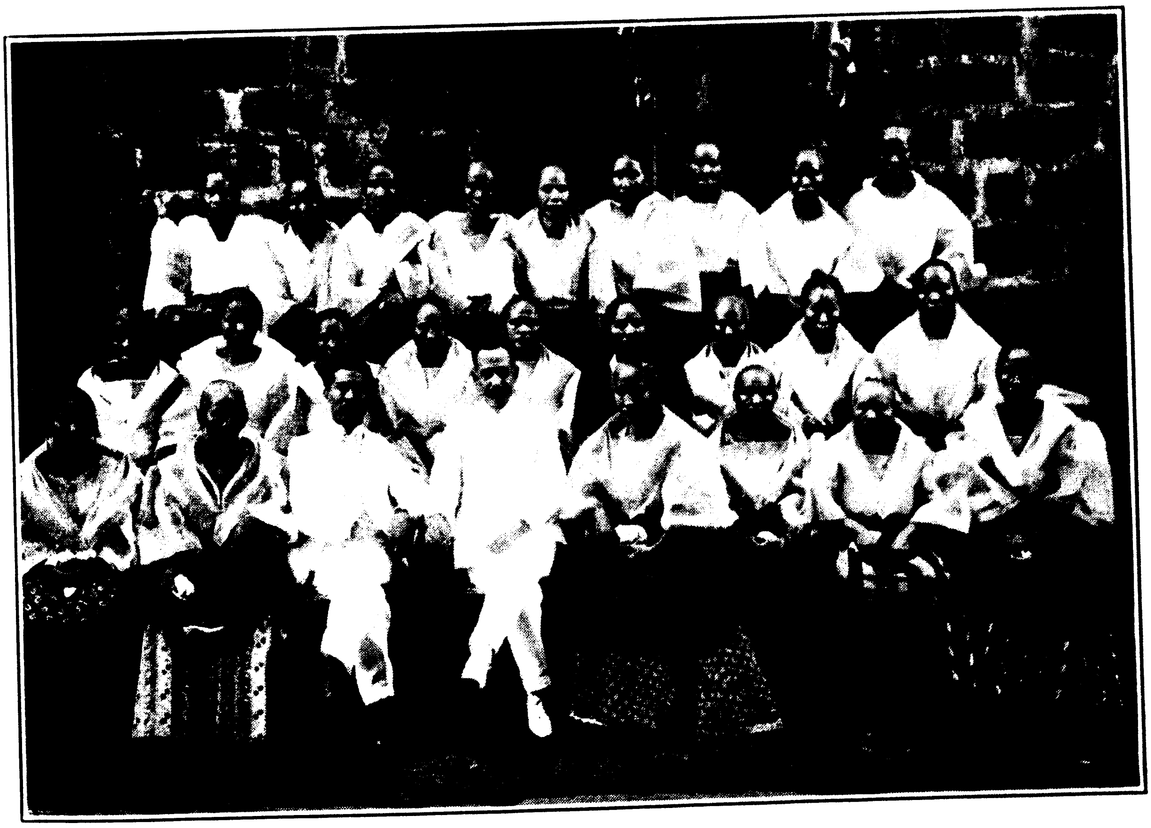


Fig. 2. PROFESSOR CALDERON AND MUNICIPAL PHYSICIAN CASTAÑEDA WITH A GROUP OF FILIPINA MIDWIVES.

PLATE X.

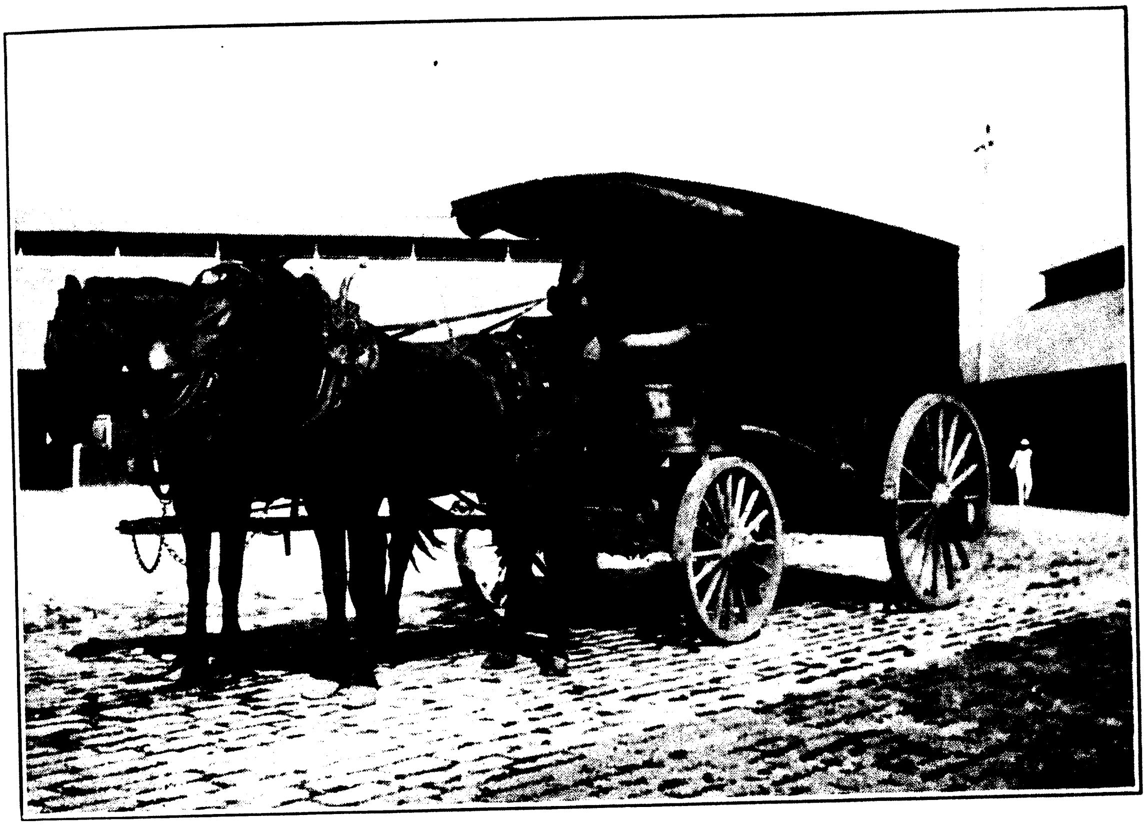


Fig. 1. DEAD-ANIMAL WAGON.

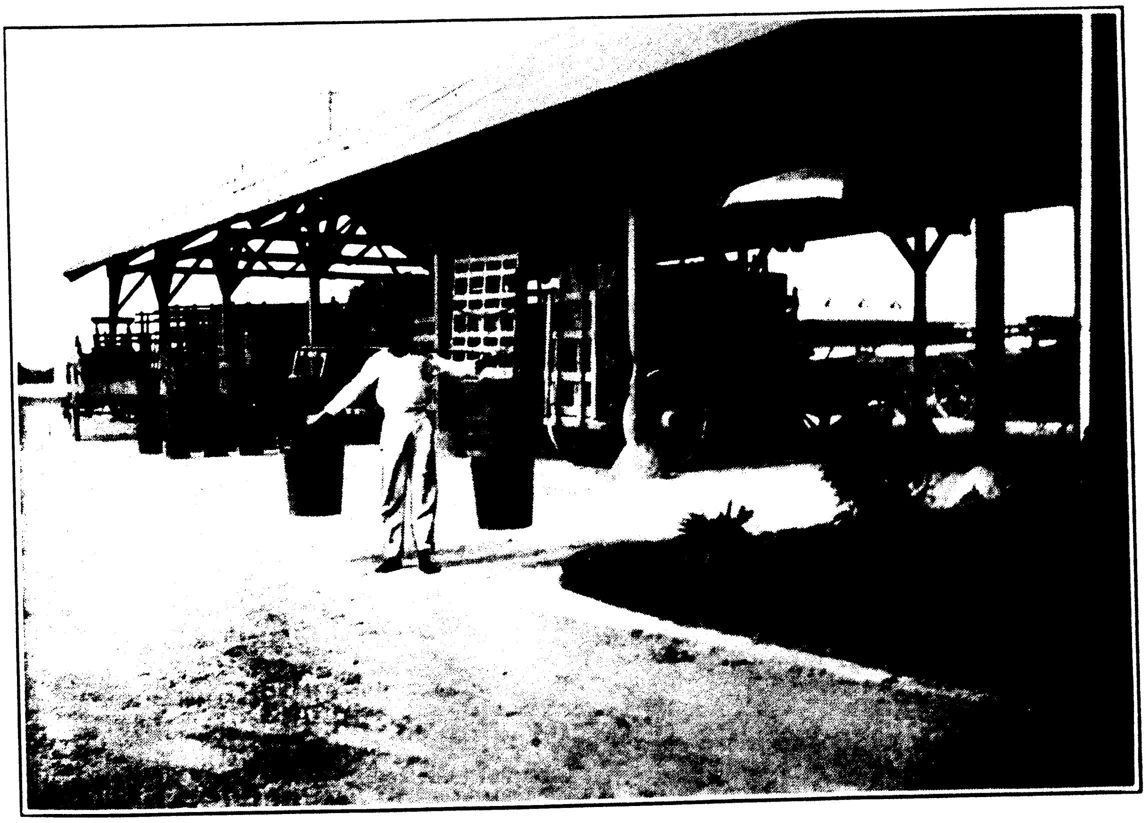


Fig. 2. METHOD OF HANDLING PAILS, PAIL-CONSERVANCY SYSTEM.

(Soon to be superseded by new sewer system.)

PLATE XI.

WAGON TRANSPORTING PAILS TO SANITARY BARGE.

(Soon to be superseded by new sewer system.)

PLATE XII.

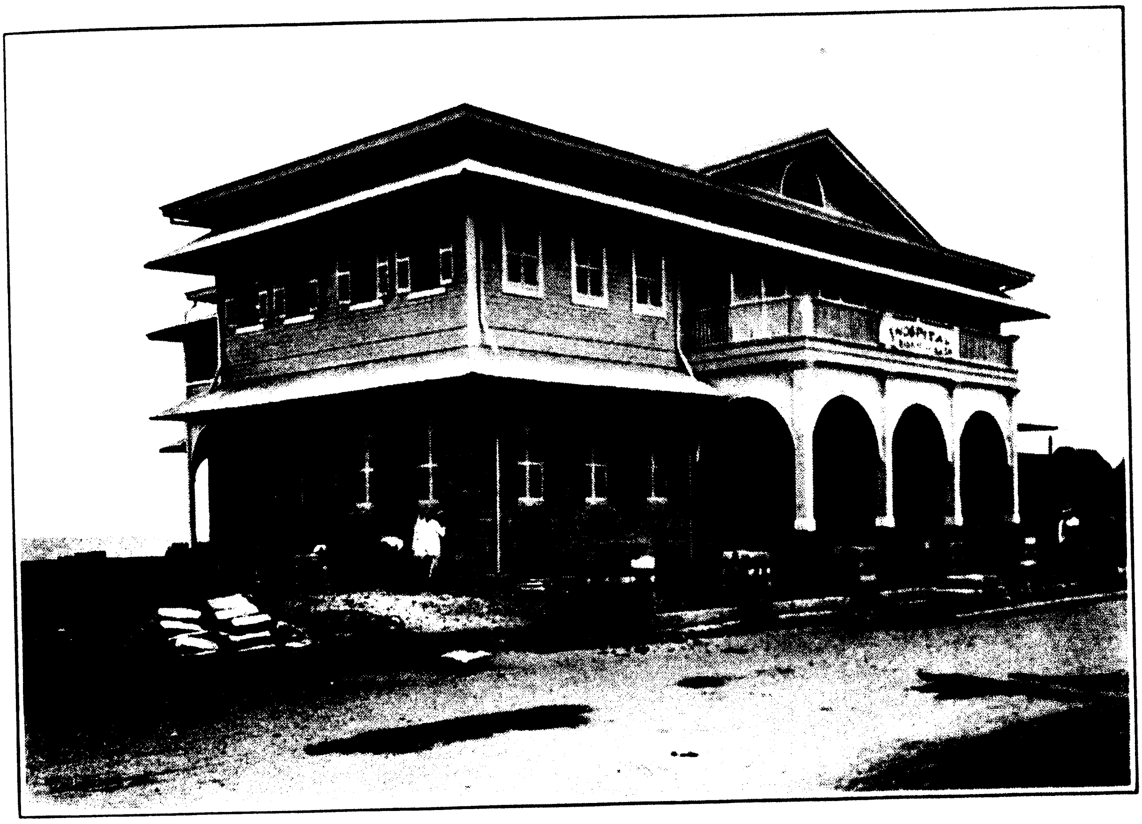


Fig. 1. MARY J. JOHNSTON MEMORIAL HOSPITAL.

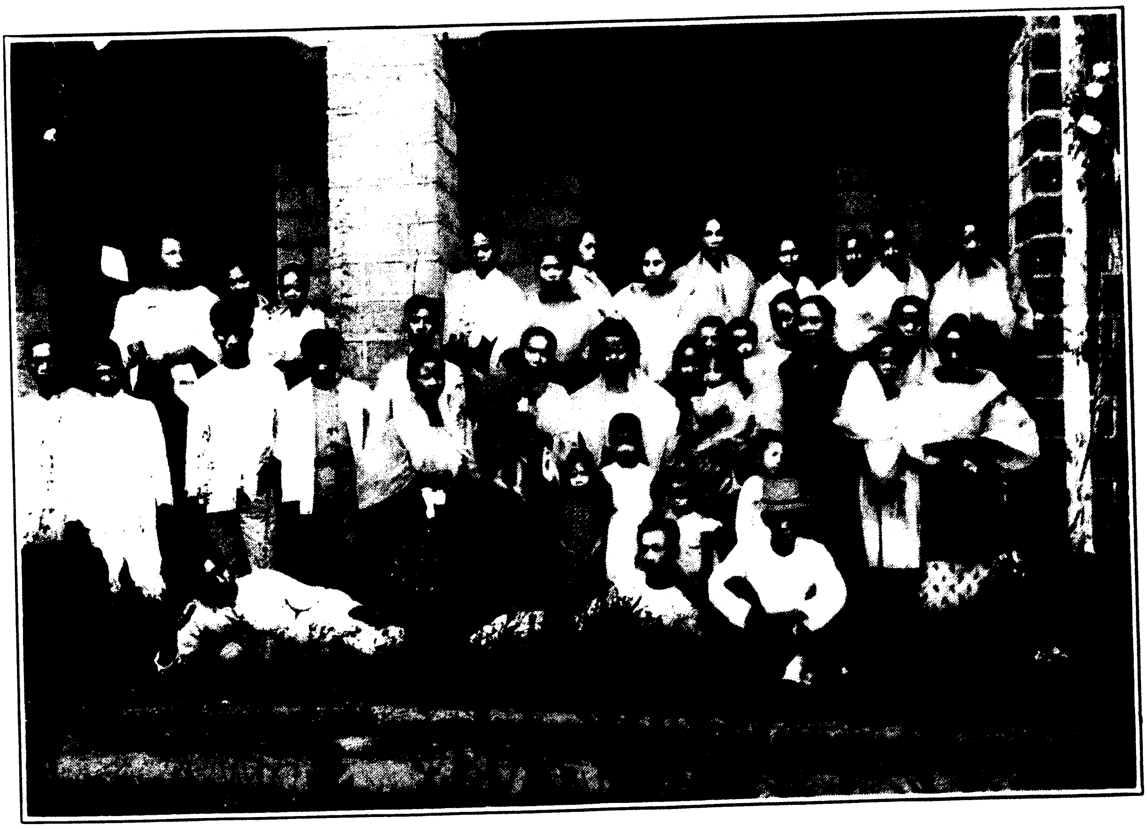


Fig. 2. GROUP OF OUTDOOR PATIENTS.

PLATE XIII.

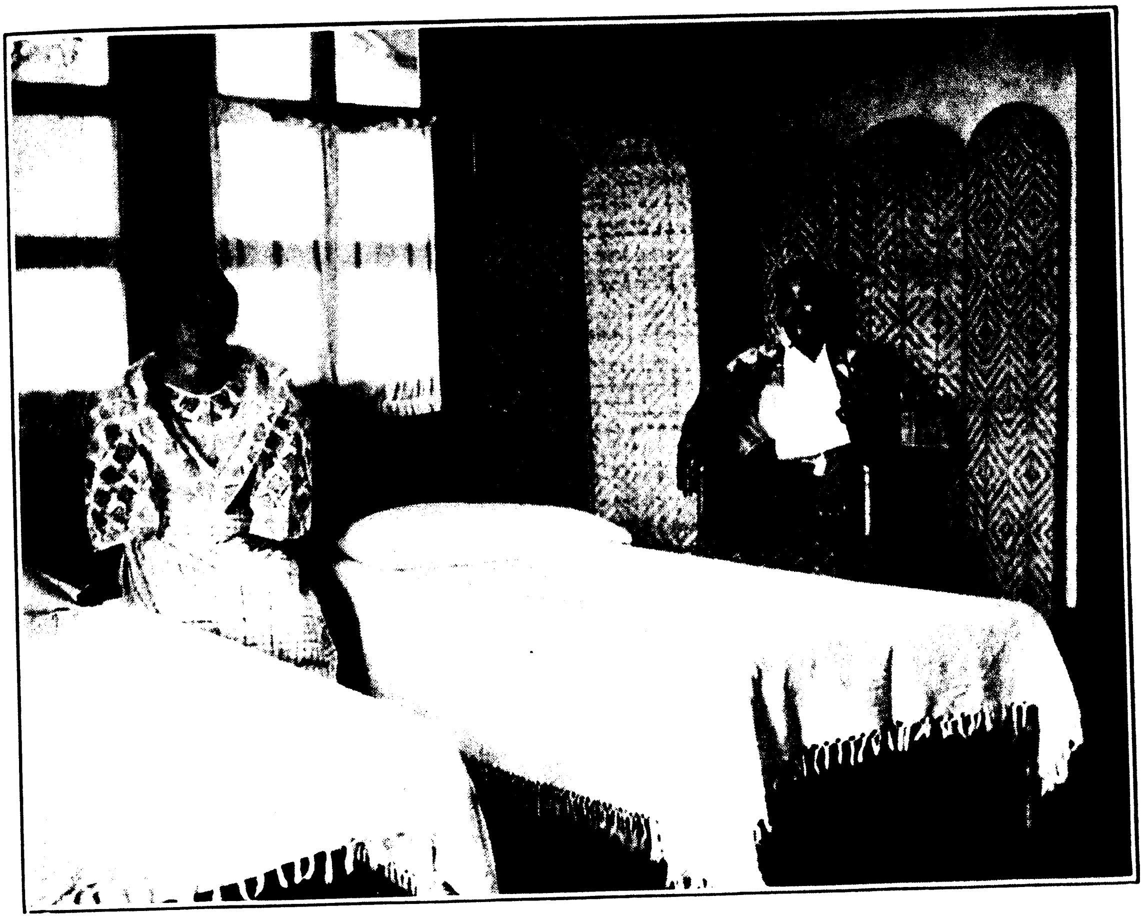


Fig. 1. ROOM FOR CONVALESCENTS.

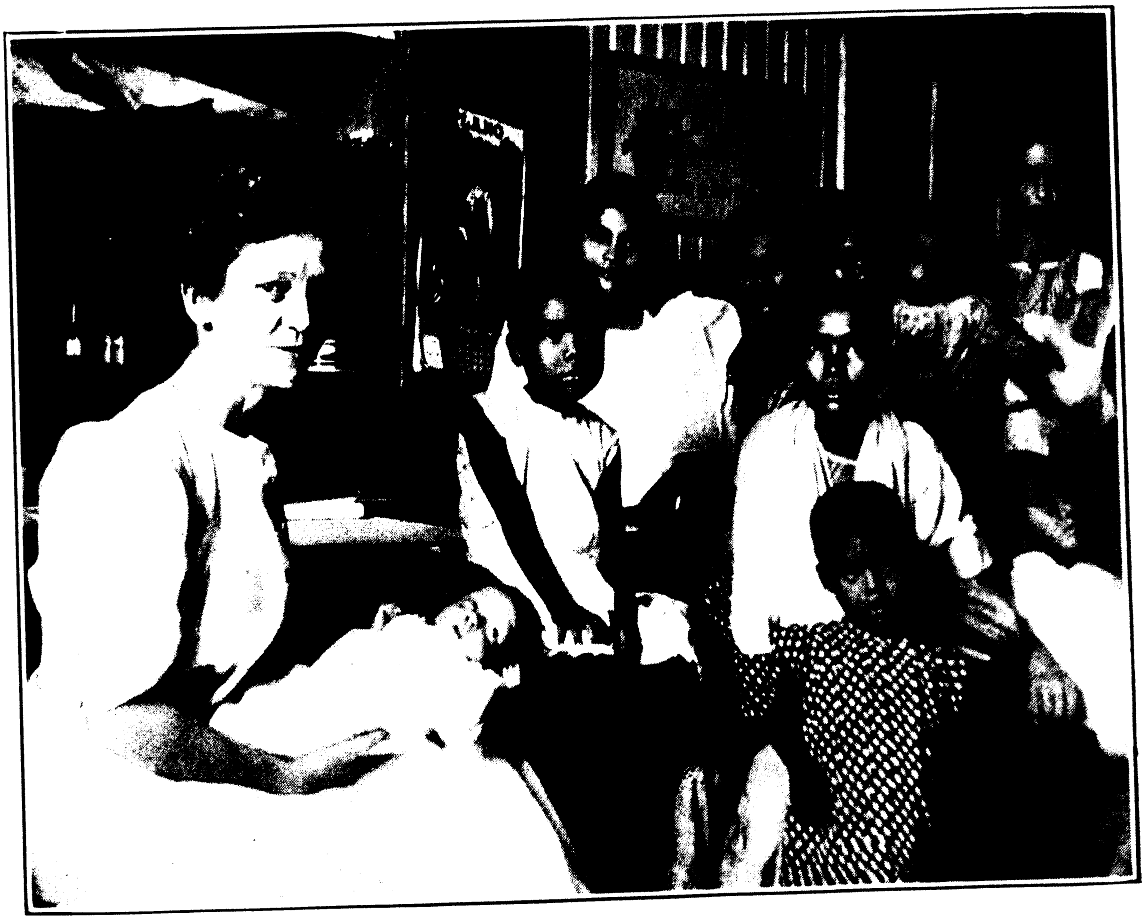
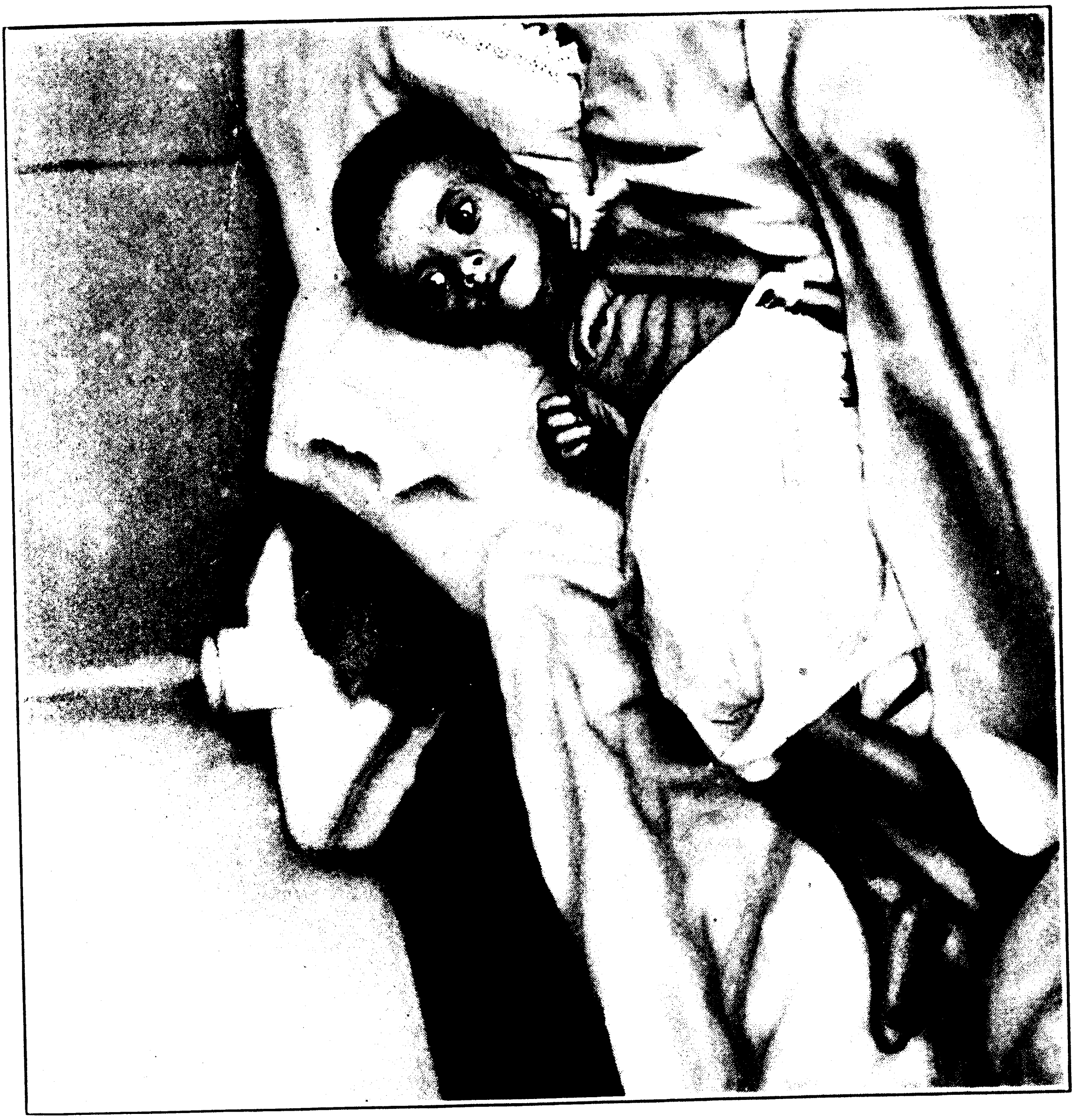


Fig. 2. CHILDRENS' CLINIC.

PLATE XIV.



CHILD PATIENT (NOT AN UNUSUAL SIGHT).

PLATE XV.

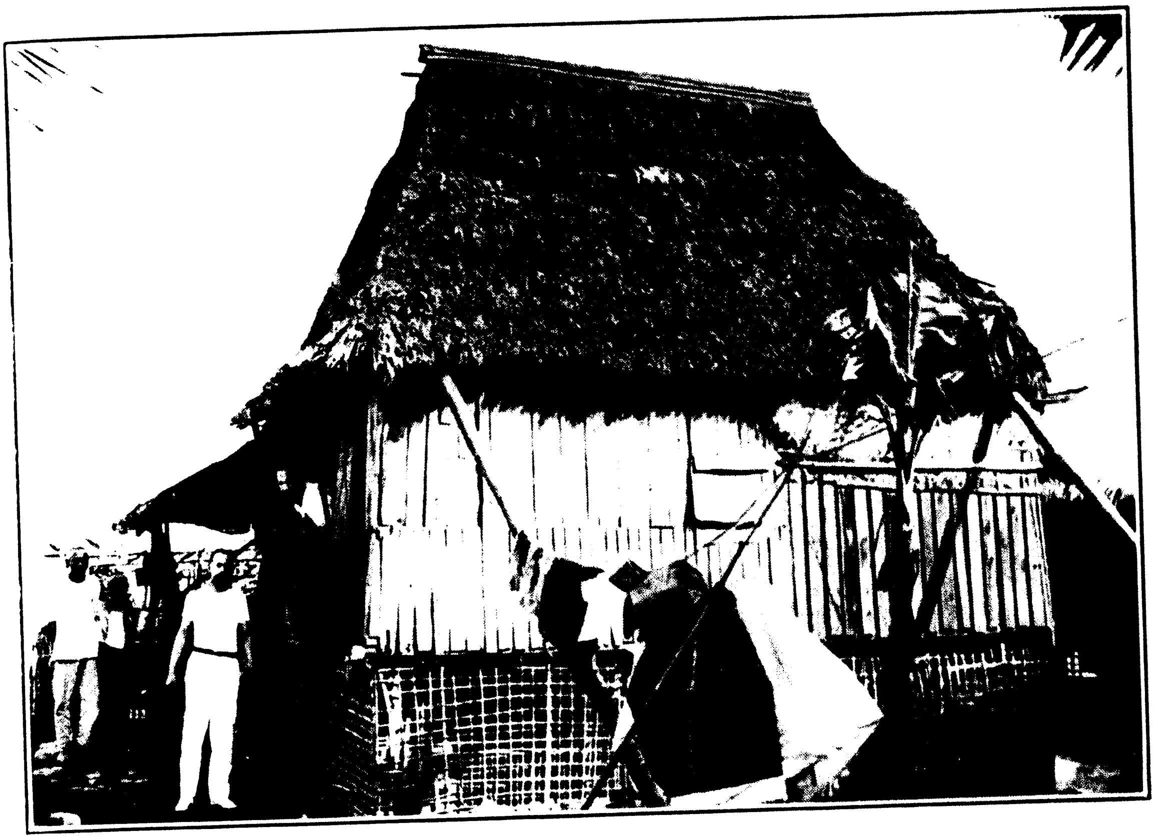


FIG. 1. REPRESENTATIVE BIRTHPLACE OF FILIPINO BABIES—EXTERIOR.

(Professor Calderon's collection.)

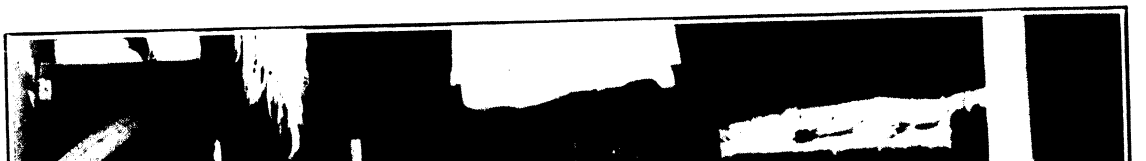


FIG. 2. REPRESENTATIVE BIRTHPLACE OF FILIPINO BABIES—INTERIOR.

(Professor Calderon's collection.)

PLATE XVI.

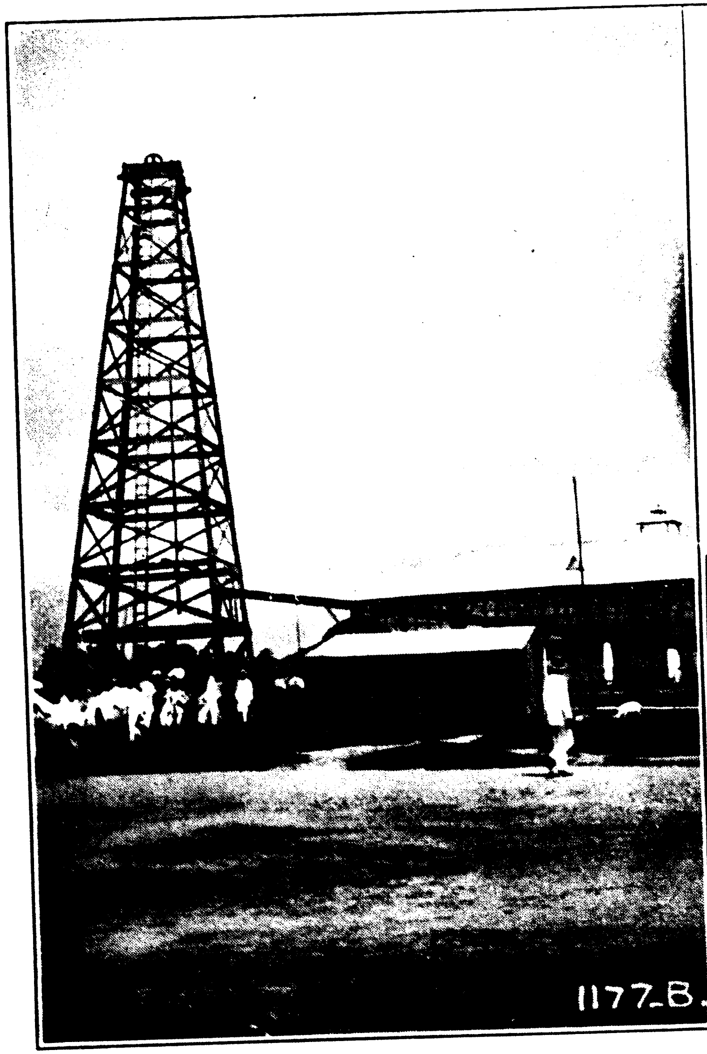


Fig. 1. DEEP WELL RIG NO. 3 DRILLING WELL AT DAGUPAN, PANGASINAN.

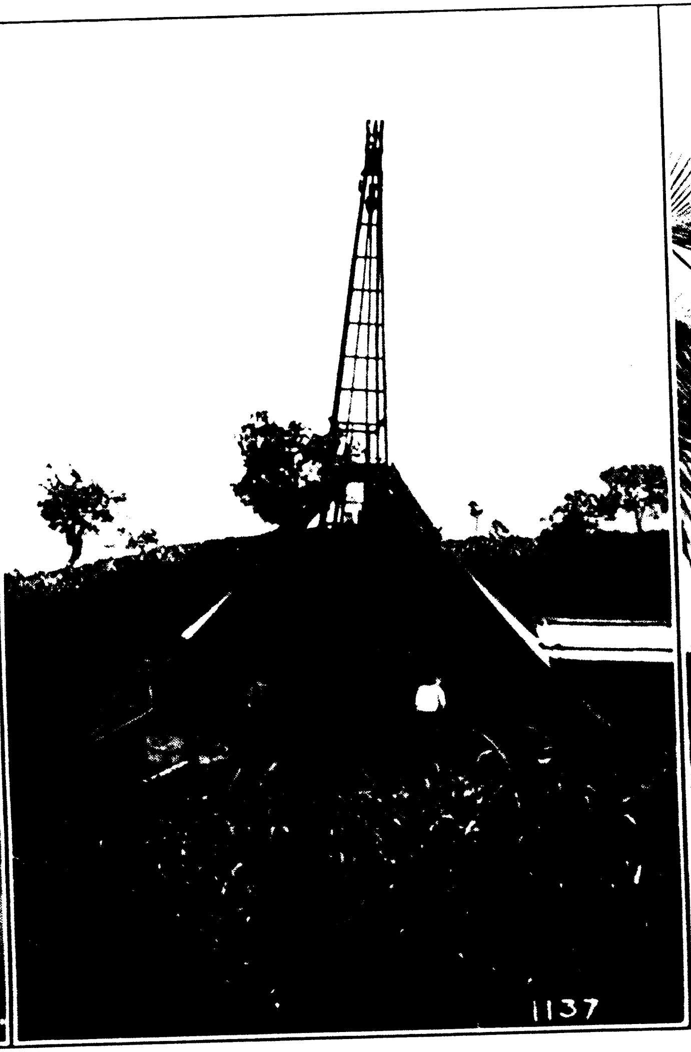


Fig. 2. DEEP WELL RIG NO. 1 (PORTABLE, CROSS COUNTRY) DRILLING WELL AT STOCK FARM (BUREAU OF AGRICULTURE), ALABANG.

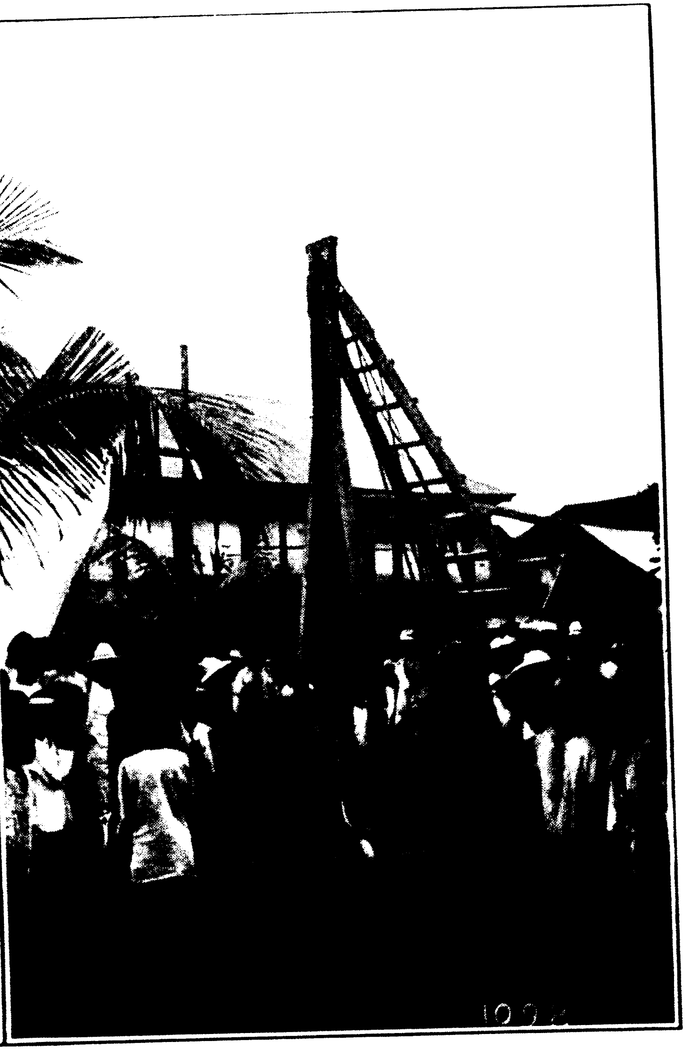


Fig. 3. JET RIG NO. 1 DRILLING 3-INCH WELL AT GUAGUA, PAMPANGA.

PLATE XVII.